

Arkansas Ground Water Protection and Management Report

for 2003



January 2004



STATE OF ARKANSAS

ARKANSAS SOIL AND WATER CONSERVATION COMMISSION

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TABLE OF CONTENTS

Introduction.....p.9

Ground Water Management, Critical Areas, and Ground Water Change

 Summary of Factors Considered in Critical Ground Water Area Hydrogeologic Analysis.....p.11
 Alluvial Aquifer.....p.15
 Sparta/Memphis Aquifer.....p.16
 South Arkansas Study Area.....p.18
 Grand Prairie Study Area.....p.20
 Cache Study Area.....p.32
 Boeuf-Tensas Study Area.....p.40
 St. Francis Study Area.....p.41
 Cockfield Aquifer.....p.55
 Wilcox Aquifer.....p.57

Water Quality

 Specific Conductance / Dissolved Chlorides.....p.59
 Non-point Source Program.....p.60

Arkansas Water Well Construction Commission Program

 Licensing.....p.61
 Wells Drilled Fiscal Year 2000 as Compared to Wells Registered.....p.62

Ground Water Use

 Reported Water Use.....p.64

Ground-Water Modeling

 USGS Ground-Water Model Summary.....p.67

Summary.....p.71

Tables

Table #	Title
1.	USGS Water Use Data by Aquifer and by County in Million Gallons per Day
2.	Chloride and Conductivity Data for the Alluvial and Sparta/Memphis Aquifers
3.	Specific Conductance of the Alluvial Aquifer Summer 2002

Figures

Figure #	Title
1.	Arkansas Ground Water Study Areas, 2001.....p.12
2.	Critical Ground Water Designations and Future Study Areas.....p.13
3.	Cones of Depression in the Alluvial and Sparta/Memphis Aquifers in Eastern Arkansas.....p.14
4.	Sparta/Memphis Aquifer Water Level Changes in South Arkansas Study Area, 2002-2003.....p.23
5.	Sparta/Memphis Aquifer Water Level Changes in South Arkansas Study Area, 1998-2003.....p.24
6.	Sparta/Memphis Aquifer Water Level Changes in South Arkansas Study Area, 1993-2003.....p.25
7.	Sparta/Memphis Aquifer Water Level Changes in the Grand Prairie Study Area, 2002-2003.....p.26
8.	Sparta/Memphis Aquifer Water Level Changes in the Grand Prairie Study Area, 1998-2003.....p.27
9.	Sparta/Memphis Aquifer Water Level Changes in the Grand Prairie Study Area, 1993-2003.....p.28
10.	Alluvial Aquifer Water Level Changes in the Grand Prairie Study Area, 2002-2003.....p.29
11.	Alluvial Aquifer Water Level Changes in the Grand Prairie Study Area, 1998-2003.....p.30
12.	Alluvial Aquifer Water Level Changes in the Grand Prairie Study Area, 1993-2003.....p.31
13.	Alluvial Aquifer Water Level Changes in the Cache Study Area, 2001-2002.....p.34
14.	Alluvial Aquifer Water Level Changes in the Cache Study Area, 1997-2002.....p.35
15.	Alluvial Aquifer Water Level Changes in the Cache Study Area, 1993-2003.....p.36
16.	Sparta/Memphis Aquifer Water Level Changes in the Cache Study Area, 2002-2003.....p.37
17.	Sparta/Memphis Aquifer Water Level Changes in the Cache Study Area, 1998-2003.....p.38
18.	Sparta/Memphis Aquifer Water Level Changes in the Cache Study Area, 1993-2003.....p.39
19.	Alluvial Aquifer Water Level Changes in the Boeuf-Tensas Study Area, 2002-2003.....p.42
20.	Alluvial Aquifer Water Level Changes in the Boeuf-Tensas Study Area, 1998-2003.....p.43
21.	Alluvial Aquifer Water Level Changes in the Boeuf-Tensas Study Area, 1993-2003.....p.44
22.	Sparta/Memphis Aquifer Water Level Changes in the Boeuf-Tensas Study Area, 2002-2003.....p.45
23.	Sparta/Memphis Aquifer Water Level Changes in the Boeuf-Tensas Study Area, 1998-2003.....p.46
24.	Sparta/Memphis Aquifer Water Level Changes in the Boeuf-Tensas Study Area, 1993-2003.....p.47
25.	Alluvial Aquifer Water Level Changes in the St. Francis Study Area, 2002-2003.....p.49
26.	Alluvial Aquifer Water Level Changes in the St. Francis Study Area, 1998-2003.....p.50
27.	Alluvial Aquifer Water Level Changes in the St. Francis Study Area, 1993-2003.....p.51
28.	Sparta/Memphis Aquifer Water Level Changes in the St. Francis Study Area, 2002-2003.....p.52
29.	Sparta/Memphis Aquifer Water Level Changes in the St. Francis Study Area, 1998-2003.....p.53
30.	Sparta/Memphis Aquifer Water Level Changes in the St. Francis Study Area, 1993-2003.....p.54
31.	Cockfield Aquifer Water Level Changes from 2000 to 2003.....p.56
32.	Wilcox Aquifer Water Level Changes from 2002 to 2003.....p.58
33.	Arkansas Map of Total Ground Water Use as of 2000.....p.65
34.	Arkansas Total Water Use Graph for 1965-2000.....p.66
35.	Figure of the North and South USGS Optimization Model Areas.....p.68
36.	1993-2003 Water-Level Change Surface for the Alluvial Aquifer.....p.69
37.	1993-2003 Water-Level Change Surface for the Sparta/Memphis Aquifer.....p.70

Appendices

Appendix A	Alluvial Aquifer Water Level Monitoring Data
Appendix B	Selected Alluvial Aquifer Well Hydrographs
Appendix C	Sparta/Memphis Water Level Monitoring Data
Appendix D	Selected Sparta/Memphis Aquifer Well Hydrographs
Appendix E	Cockfield and Wilcox Aquifer Water Level Monitoring Data
Appendix F	Comparative Table of Selected Fall Water Level Changes
Appendix G	Water Quality Data from Selected ASWCC Wells

INTRODUCTION

This report is produced annually by the Arkansas Soil and Water Conservation Commission (ASWCC) pursuant to the Arkansas Ground Water Protection and Management Act of 1991. This report provides a summary of ground-water protection and management programs administered by the ASWCC during the year 2003. Several of these programs are funded through federal grant programs, and awarded by Region VI of the Environmental Protection Agency.

The Arkansas Soil and Water Conservation Commission (ASWCC), United States Geological Survey (USGS), Arkansas Geological Commission (AGC), and the Natural Resource Conservation Service (NRCS) each monitor ground-water wells throughout Arkansas to determine ground-water levels as well as ground-water quality.

A monitoring schedule has been established to obtain data from the alluvial aquifer and the Sparta/Memphis Aquifer on an annual basis. These measurements are taken each spring so as to be the least affected by seasonal pumping for irrigation. The drawdown that results from seasonal pumping is also determined by the NRCS and ASWCC taking measurements of the alluvial aquifer in both the spring and fall.

Data collected for this report is collected by staff of the ASWCC, USGS, and NRCS. All water-level and water quality data provided in this report is collected in accordance with USGS protocol and quality control guidelines.

Each spring approximately 800 wells are monitored in the alluvial aquifer resulting in the largest number of water level measurements for any one aquifer in the state. This number will vary from year to year depending on the resources available. There are approximately 500 wells that are monitored for water levels in the Sparta/Memphis Aquifer.

The general trend is that the ground-water levels in Arkansas have been slowly dropping, with a few areas that have remained constant or have risen slightly. There are areas of the state experiencing ground-water withdrawals of such magnitude that demand on the aquifer exceeds the natural recharge, or sustainable yield, resulting in consistently falling ground-water levels, and the development of cones of depression.

These areas are depressions in the potentiometric surface, and occur in both the alluvial and Sparta/Memphis Aquifers. (Fig. 3)

The areas in the state that are of most concern are a five-county area of the Sparta Aquifer in southern Arkansas that was designated a critical ground water area in 1996, the Grand Prairie area in eastern Arkansas for which both the alluvial and Sparta/Memphis aquifers were designated as critical ground water areas in 1998, and the Cache Study Area in which significant declines in the alluvial aquifer have been observed. Since designation as a critical area the South Arkansas Study Area these declines have been reduced significantly due to education and ground-water conservation in the area. The Grand Prairie Study Area has continued to show significant declines in the alluvial aquifer since designation, as well as a considerable 9.22 foot average decline in the Sparta/Memphis Aquifer over the last 5 years, and a 19.30 foot decline over the past 10 years.

Data from the alluvial aquifer wells show that of 375 alluvial wells monitored from 1998 to 2003, 299 (79.7%) have shown a decline during this time period. The wells showing the greatest declines in the alluvial aquifer during this 5-year period are located in the Cache Study Area with an average change of -5.82 feet, and the Boeuf-Tensas Study Area with an average change of -4.22 feet.

Data from the wells monitored in the Sparta/Memphis Aquifer show that of 125 wells monitored from 1998 to 2003, 87 of these (69.6%) show a decline in static water levels. The wells showing the greatest decline in the Sparta/Memphis Aquifer are located in the Grand Prairie Critical Ground Water Area with an average change of -9.22 feet during this time.

Water quality data collected by the USGS in 2000 show a possible trend toward increasing chloride concentration in the alluvial aquifer in western Cross and Poinsett Counties. The 2000 data also shows an expansion of the area with considerable specific conductance in Ashley County and Chicot County. Areas with elevated specific conductance are linked to the amount of dissolved chloride that is in the ground water in that area.

The ASWCC will continue to monitor water levels and water quality throughout Arkansas with emphasis on the Cache, Grand Prairie, and Boeuf-Tensas Study Areas.

Significant water-level declines have been observed in these areas, as well as increased amounts of dissolved chloride. The ASWCC will continue to work with other Federal, State, and local agencies to enhance ground water monitoring and research programs.

GROUND WATER MANAGEMENT AND CRITICAL AREAS

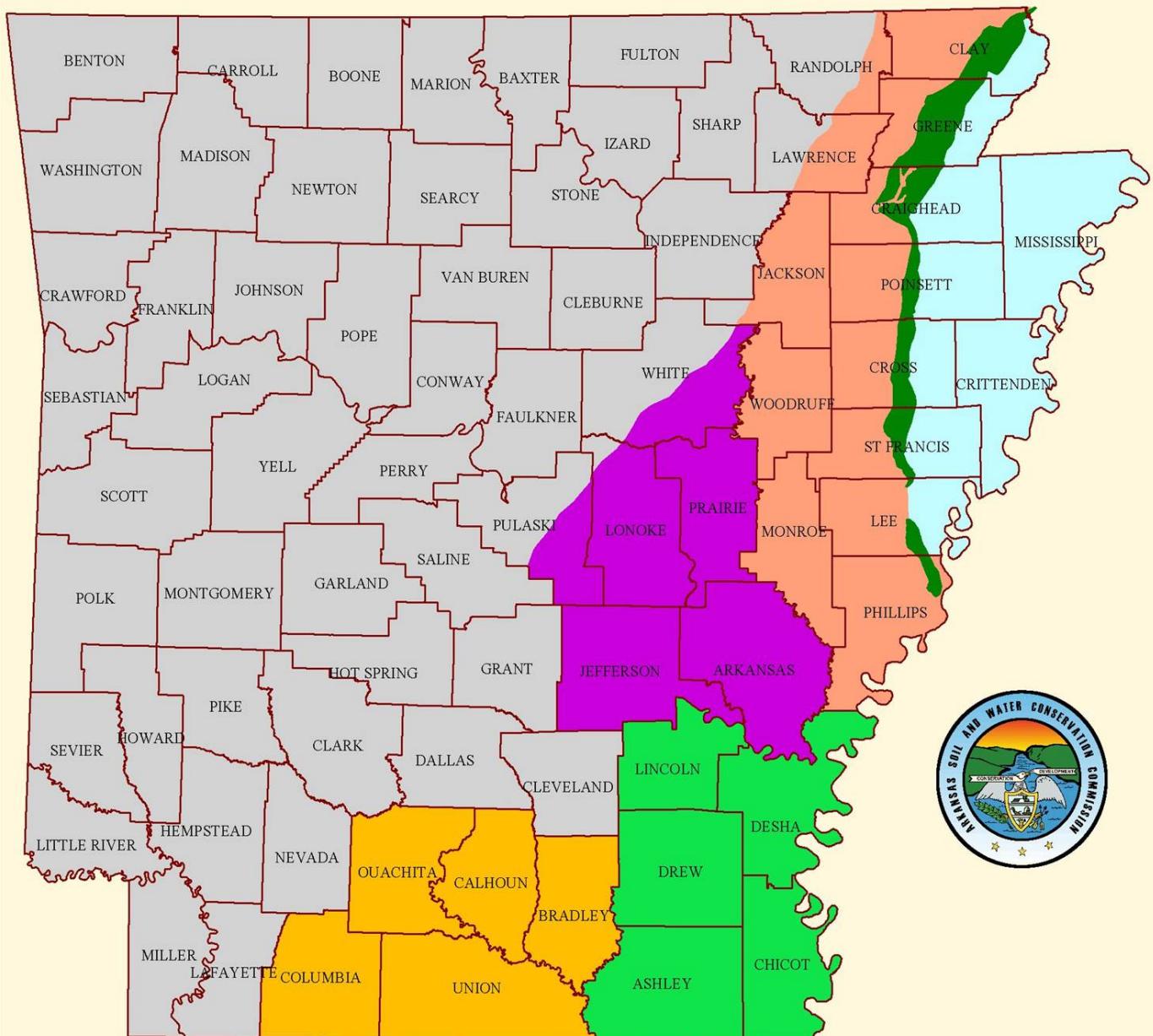
Summary of Factors Considered in a Critical Ground Water Area

Hydrogeologic Analysis

An analysis would be made to determine areas that have developed, or trends that indicate they may develop significant ground water depletion and/or degradation. In a confined aquifer this analysis will examine, but not be restricted to, the relative position of water levels to the top of the formation, water level declines both short and long term, and trends that may indicate degradation of water quality. Consideration will also be given to a safe yield of ground water pumping strategy for the entire aquifer, including the utilization of ground water flow and optimization models, the natural hydrologic boundaries of the aquifer, and projected water level declines. The USGS has recently finished work on safe yield modeling, and projections are discussed in a later section of this report.

In an unconfined aquifer the analysis would examine, but not be restricted to the recent saturated thickness of the formation, water level declines both short and long term, and trends toward the degradation of water quality. Consideration will also be given to a safe yield of ground water pumping strategy for the aquifer including the utilization of ground water flow models, the natural hydrologic boundaries of the aquifer, and projected water level declines. Analysis will be done on hydrographic projections as well as ground water flow model and optimization projections. The analysis would also be based on hydraulic criteria and natural hydrogeologic

Arkansas Ground Water Study Areas

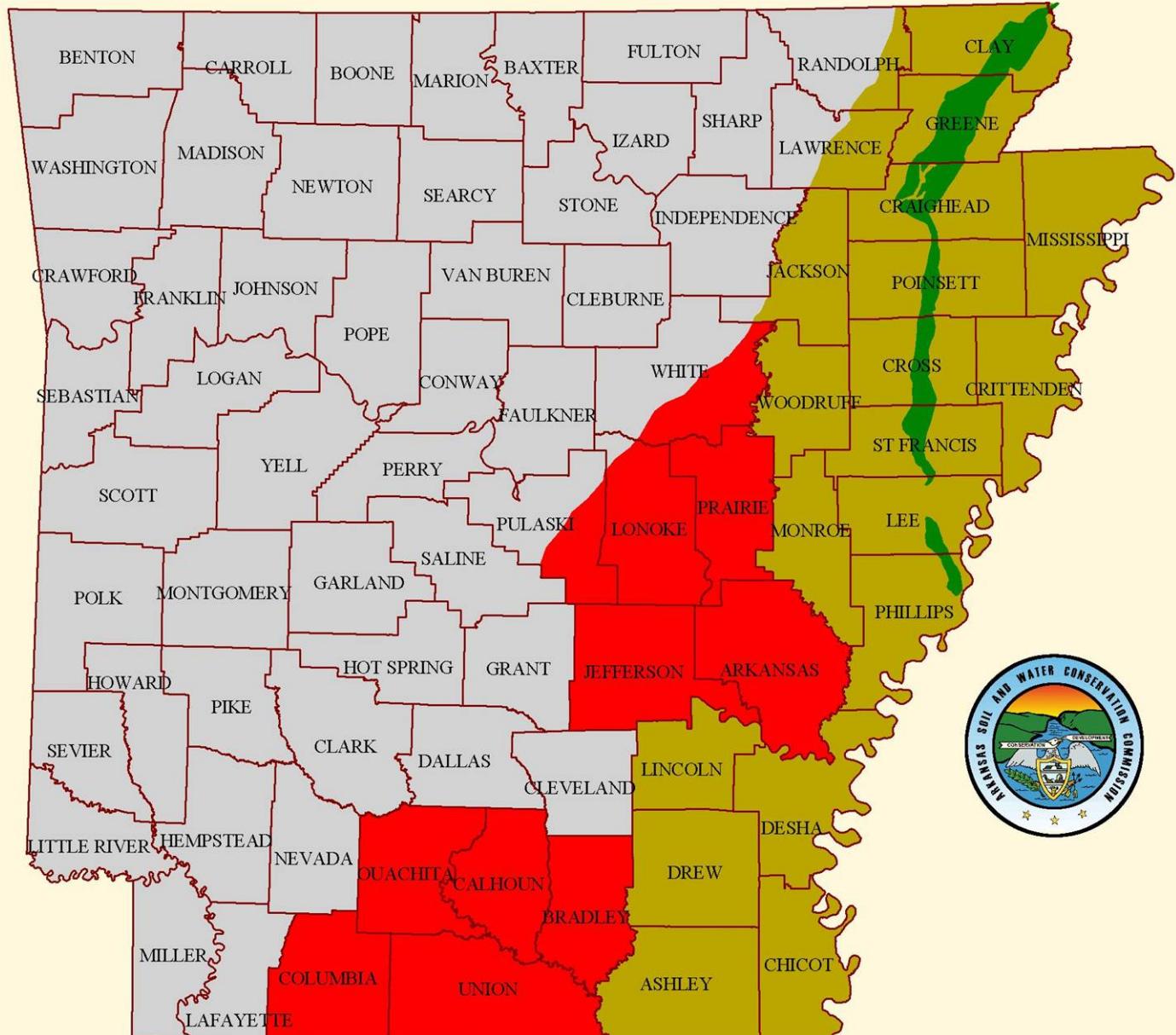


Legend

- | | |
|------------------------|---------------------------|
| County Lines | South Arkansas Study Area |
| Crowley's Ridge | Grand Prairie Study Area |
| Cache Study Area | Boeuf-Tensas Study Area |
| St. Francis Study Area | |

Fig. 1

Critical Ground Water Designations



Legend

- Study Areas
- Current Critical Areas
- Crowley's Ridge
- County Lines

Fig. 2

Cones of Depression

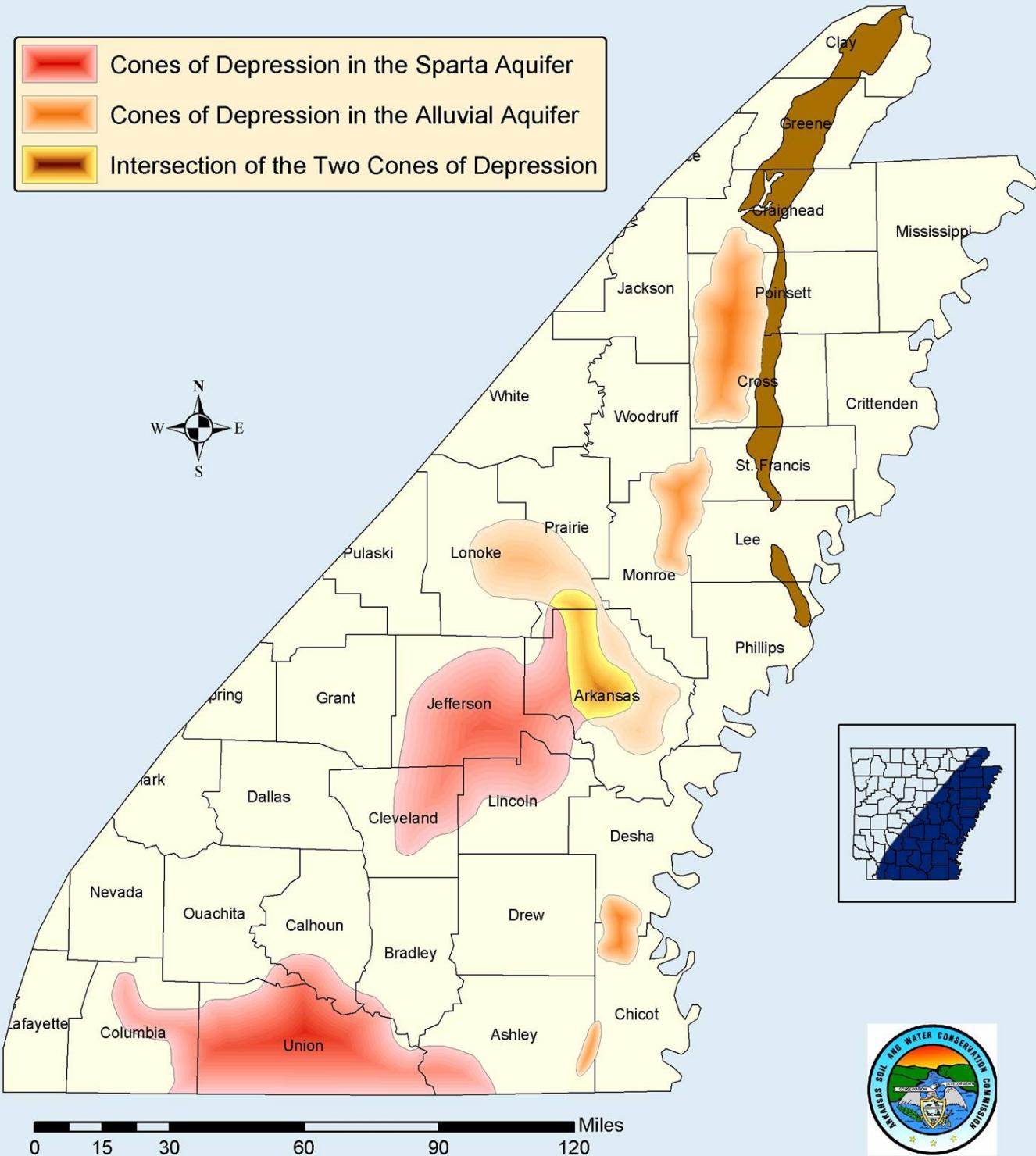


Fig. 3

boundaries. This is necessary because water levels fluctuate and because ground water withdrawals in any given area can affect other hydraulically connected areas.

Hydrogeology

Alluvial Aquifer

The Quaternary-age alluvial aquifer extends north from Arkansas into Missouri, south into Louisiana, and under the Mississippi River into Tennessee and Mississippi. For the purpose of this report, the term alluvial aquifer refers to the portion of the aquifer inside the state boundaries of Arkansas. This area is bound by the Fall Line to the west, the Mississippi River to the east, and the state lines to the north and south. The aquifer is the uppermost aquifer in the Mississippi Embayment and is composed of 50 to 150 feet of sand and gravel, grading from coarse gravel at the bottom to fine sand at the top. It generally is overlain by the Mississippi River Confining Unit, which is composed of 0 to 50 feet of fine-grained sand, silt, and clay. The alluvial aquifer is underlain by confining units composed of aquifers and confining units of the Mississippi Embayment, which are less permeable than the alluvial aquifer. The alluvial aquifer is connected hydraulically with several rivers and drainage areas.

Mostly due to the use of ground water for agriculture in the region, the aquifer has been pumped in ever-increasing amounts since records were kept from the early 1900's. In 1995 Arkansas ranked fourth in the nation for ground water withdrawals with an estimated use of 5,460 million gallons per day (Mgal/d) (Solley, et. al., 1998). By 2000 that number had increased to approximately 6,800 Mgal/d. Ground water furnishes 63% of the state's total water use, and 92% of the ground water used, comes from the alluvial aquifer. Agriculture accounts for 98% of the total water that is pumped from the alluvial aquifer. Increased pumping from this aquifer has resulted in decreased outflow to rivers, increased inflow from rivers, increased inflow from the overlying confining unit, regional changes in ground-water flow, regional water level declines, reduction of aquifer storage, and decreases in well yields (Ackerman, 1996).

There were 375 alluvial aquifer wells monitored for water-level change in both 1998 and 2003, 299 (79.7%) of these had a decline in the static water level. Of 603 alluvial aquifer wells monitored in both 2002 and 2003, 307 (50.9%) of these had declining static water levels and 208 (34.5%) of those wells showed static water level declines of one foot per year or more. The average change over the entire aquifer during the 2002-2003 monitoring period was -0.47 feet. The greatest 5-year declines were observed in the Cache Study Area (-5.82 feet) and the Boeuf-Tensas Study Area (-4.22 feet). Appendix A is a table of specific water level monitoring data for the alluvial aquifer. Appendix B is a series of selected hydrographs for alluvial aquifer wells.

Sparta/Memphis Aquifer

The Sparta/Memphis Aquifer of Tertiary Age is located in the south, southeast, and east regions of Arkansas, as well as portions of Texas, Louisiana, and Mississippi. The aquifer outcrops in Dallas, Hot Spring, Saline, Grant, Nevada, Columbia, and Ouachita Counties throughout the state. The Sparta/Memphis Sand Aquifer thickness averages approximately 600 feet, ranging from a thickness of approximately 200 to 300 feet thick in the outcrop area to about 900 feet thick in the southeastern part of the state. The majority of the area discussed in this report is a confined aquifer, underlain by the Cane River Formation and overlain by the Cook Mountain Formation, both of which are effective confining units.

The Sparta Aquifer in south Arkansas consists of two units, separated by the confining unit located between them: the upper Greensand aquifer and the lower El Dorado aquifer. The Sparta is composed mainly of sand with considerable amounts of silt, clay, shale, and lignite, which are found in lenses throughout the unit. Lithologically, it varies considerably both vertically and laterally. Glauconite, a green hydrous potassium iron silicate mineral, is sometimes found in sand lenses in the upper levels of the aquifer, hence the name "Greensand".

The Memphis Sand Aquifer in eastern Arkansas is part of a thick sand section in the middle and lower portions of the Claiborne Group. It includes the Sparta Sand, the predominantly sandy facies of the Cane River, and the Carrizo Sand. The Memphis Aquifer is the major source of quality drinking water in the area.

Ground-water levels were collected from 197 water wells in the Sparta/Memphis Aquifer throughout the south and east portions of Arkansas in 2002 and 2003. Eighty-eight of those 197 wells (44.5%) showed declines in the static water level. The average change over the entire aquifer during the 2002-2003 monitoring period was +1.27 feet. Data is collected in the spring because the water levels in the wells at that time are more representative of static levels than water level data collected during periods of increased water usage. The greatest decline from 2002 to 2003 was seen in the Cache Study Area with an average decline of -0.79 feet. During the monitoring period from 1993 to 2003, 130 wells were monitored for water-level change. One hundred and ten of these 130 wells showed a decline in static water levels during this time. Appendix C is a table of specific water level monitoring data for the Sparta/Memphis aquifer.

Data from as far back as 1965 has been plotted as hydrographs for selected wells throughout the study area. Trend line analysis indicates that the general trend for most wells included in this study is that of a lowered potentiometric surface. The exception to this rule is the data from the South Arkansas Study Area, where local education and conservation has led to significantly fewer declines, as well as some rebound in water levels in some areas. Appendix D is a series of hydrographs for Sparta/Memphis aquifer wells in Arkansas.

GROUND WATER LEVELS AND WATER LEVEL CHANGE

MONITORING

The United States Geological Survey (USGS), in cooperation with the Arkansas Soil and Water Conservation Commission (ASWCC), the Arkansas Geological

Commission (AGC), and the Natural Resource Conservation Service (NRCS), monitor wells throughout the entire state for general ground water quality as well as to record water levels. In addition, several agencies continually monitor wells throughout the state in an effort to detect significant changes and/or trends in ground water levels and ground water quality.

Through a cooperative agreement among the ASWCC, the AGC, the NRCS, and the USGS, water level measurements are made each spring for a designated portion of the monitoring network of approximately 1,200 wells statewide. A schedule of monitoring has been established based upon existing funding and the ASWCC's management and protection responsibilities as mandated by the Arkansas General Assembly. The monitoring schedule has been set up to obtain data annually from the alluvial and Sparta/Memphis Aquifers. Other aquifers with less usage are measured at least once every five years. Measurements of water levels in the alluvial and Sparta/Memphis Aquifers are taken each spring to obtain as close to true static water level data as possible. This allows the water level data to be the least affected by summer pumping. Measurements in the alluvial aquifer are obtained each spring and fall by the NRCS and are helpful in evaluating the zones of draw-down that result from seasonal pumping for irrigation of crops. A table of measurements taken in the spring and fall from the same wells is included as Appendix F. This table is useful in showing the amount of draw-down and rebound from specific wells during the pumping season.

SOUTH ARKANSAS CRITICAL GROUND WATER AREA

The South Arkansas Critical Ground Water Area is composed of the Sparta Aquifer in Bradley, Calhoun, Columbia, Ouachita, and Union Counties. In 1996 this area was the first to be designated as a critical ground water area for the Sparta aquifer pursuant to the Arkansas Groundwater Protection and Management Act of 1991.

Continued monitoring of Sparta Aquifer ground-water levels show that some ground-water levels in this region have stabilized or risen, while others continue to decline. During the 2002-2003 monitoring period, the ground-water level showed an

average change of +1.14 feet in Union County, +1.72 feet in Ouachita County, and +6.45 feet in Calhoun County. Bradley County also showed an increase of +10.01 feet, although only one well was monitored during this time. Columbia County was the only county in this study area that showed an average decline during the 2002-2003 monitoring period, with an average change of -0.46 feet. The South Arkansas Study Area as a whole had an average change of +1.15 feet during the 2002-2003 monitoring period, with 36 of the 82 wells monitored showing declines. The average change in Union County is significant due to the history of water-level declines in the past. In 1998 the average change was -22.14 feet, in 1999 -4.40 feet, in 2000 +0.62 feet, in 2001 -1.25 feet, in 2002 +3.21 feet, and in 2003 Union County showed a +1.14 foot average change. The diminishing declines in average change seem to indicate that the education and conservation efforts in Union County have made an impact on ground-water levels. (Fig. 4)

During the 5-year monitoring period, from 1998 to 2003, the South Arkansas Study Area had an average change of + 5.57 feet. Forty-eight wells were monitored over this time, with 15 of them showing a decline in static water levels. Bradley County was the only county in this study area to show an average decline in water level (-2.58 feet) during this monitoring period. All other counties showed average increases; Union +2.67 feet, Calhoun +12.0 feet, Ouachita +1.90 feet, and Columbia +11.26 feet respectively. (Fig. 5) Average change from 1993 to 2003 shows an average change of -14.38 feet in the South Arkansas Study Area for the Sparta Aquifer, ranging from -2.34 feet in Ouachita County to -31.73 feet in Columbia County. (Fig. 6)

For the Sparta Aquifer in the South Arkansas Study Area, the USGS Conjunctive Use Optimization Model indicates that both Bradley and Columbia counties are able to sustain 0% of the pumping rate of 1997. Union County can sustain only 36% of the 1997 rates, while Calhoun and Ouachita counties are able to sustain 57% respectively.

The progress that has occurred in the rate of decline in this area over the past few monitoring periods can be attributed to a local reduction on the dependence of ground-water since the critical designation. Some actions that have been taken by the

ASWCC to reduce pumpage include working with the Cooperative Extension Service to continue an education and information service in the area, increasing the number of wells monitored in the area, and continuing ground-water flow modeling activities. The ASWCC is also involved in supporting legislation that increases incentives for industrial water users, providing technical data and information on hydrology and conservation, and assisting the Bi-State Sparta Coalition interested in protecting the Sparta Aquifer in Arkansas and Louisiana. The diversion of excess surface water from the Ouachita River is anticipated to begin in the spring of 2004, and should allow for a greater degree of aquifer recovery. These conservation methods are expected to reduce the ground-water use in this area by about 80% of the 1997 pumping rate. The USGS, in cooperation with the Union County Water Conservation Board, continue to monitor the recovery of the Sparta Aquifer in south Arkansas by monitoring a network of eight wells equipped with real-time data.

GRAND PRAIRIE CRITICAL GROUND-WATER AREA

The designation "Grand Prairie" varies according to authors, but is commonly used to designate the area bounded on the south and west by the Arkansas River and on the north and east by the White and Little Red Rivers. (Fig. 1)(Ackerman, 1996) This area was designated as a critical ground-water area for the alluvial aquifer and for the Sparta/Memphis aquifer in July 1998. Since designation, water levels have continued to decline throughout much of the Grand Prairie in both the alluvial and Sparta/Memphis aquifers.

During the 2002-2003 monitoring period there were both average increases and declines in the Sparta/Memphis Aquifer throughout the counties in this study area. Prairie County had an average change of -0.03 feet, while Jefferson County showed an average change of +5.16 feet, Arkansas County +2.39 feet, and Lonoke County +2.93 feet. The average change for the entire study area was +2.73 feet from 2002 to 2003, with 21 of 65 wells (32.3%) monitored showing declines. (Fig.7)

During the 5-year monitoring period from 1997 to 2002, every county in the Grand Prairie Critical Ground Water Area showed an average water level decline in the

Sparta/Memphis Aquifer. Arkansas County showed the largest decline with an average change of -11.07 feet, followed by Jefferson County with an average of -9.73 feet. Lonoke County also showed a decline with an average change of -5.74 feet during this time, while Prairie County had a -5.98 foot average change. The entire study area averaged a -9.22 foot average change during this 5-year period in the Sparta/Memphis Aquifer, with 56 of 60 wells monitored showing declines. (Fig.8)

All 41 Sparta Aquifer wells monitored from 1993 to 2003 in the Grand Prairie Study Area showed declines, ranging from -21.93 feet in Arkansas County, to -14.21 feet on Lonoke County. The entire study area had an average change of -19.30 feet during this time. (Fig.9)

During the 2002-2003 monitoring period in the Grand Prairie Critical Ground Water Area had counties with both average declines and increases in the alluvial aquifer. Pulaski County had an average change of +1.34 feet, and White County an average of +0.39 feet. Counties showing an average decline during this period were Arkansas, with an average change of -0.33 feet, Lonoke with an average of -0.99 feet, Jefferson an average of -0.87 feet, and Prairie with an average of -0.71 feet, respectively. The average change for the entire study area for 2002-2003 in the alluvial aquifer was -0.52 feet, with 71 of the 136 wells (52.2%) monitored showing declines. (Fig.10)

Ground-water levels have also declined during the 1998 to 2003 monitoring period in the alluvial aquifer for the Grand Prairie Critical Ground Water Area, with the exception of White County, which had an increase of 1.49 feet during this time. White County was also the only county to also show an average increase (+2.30 feet) during the 1993-2003 monitoring period. From 1998 to 2003 Lonoke County showed an average decline of -9.71 feet, Prairie County -2.55 feet, Jefferson County -4.93 feet, and Arkansas County -1.82 feet, respectively. The Grand Prairie Study Area had an average decline -3.75 feet during this 5-year period, with 45 of the 58 wells (77.6%) monitored showing declines. (Fig.11)

From 1993 to 2003 the alluvial aquifer in the Grand Prairie Study Area had an average change of -6.76 feet, with 20 of 23 wells monitored showing declines.

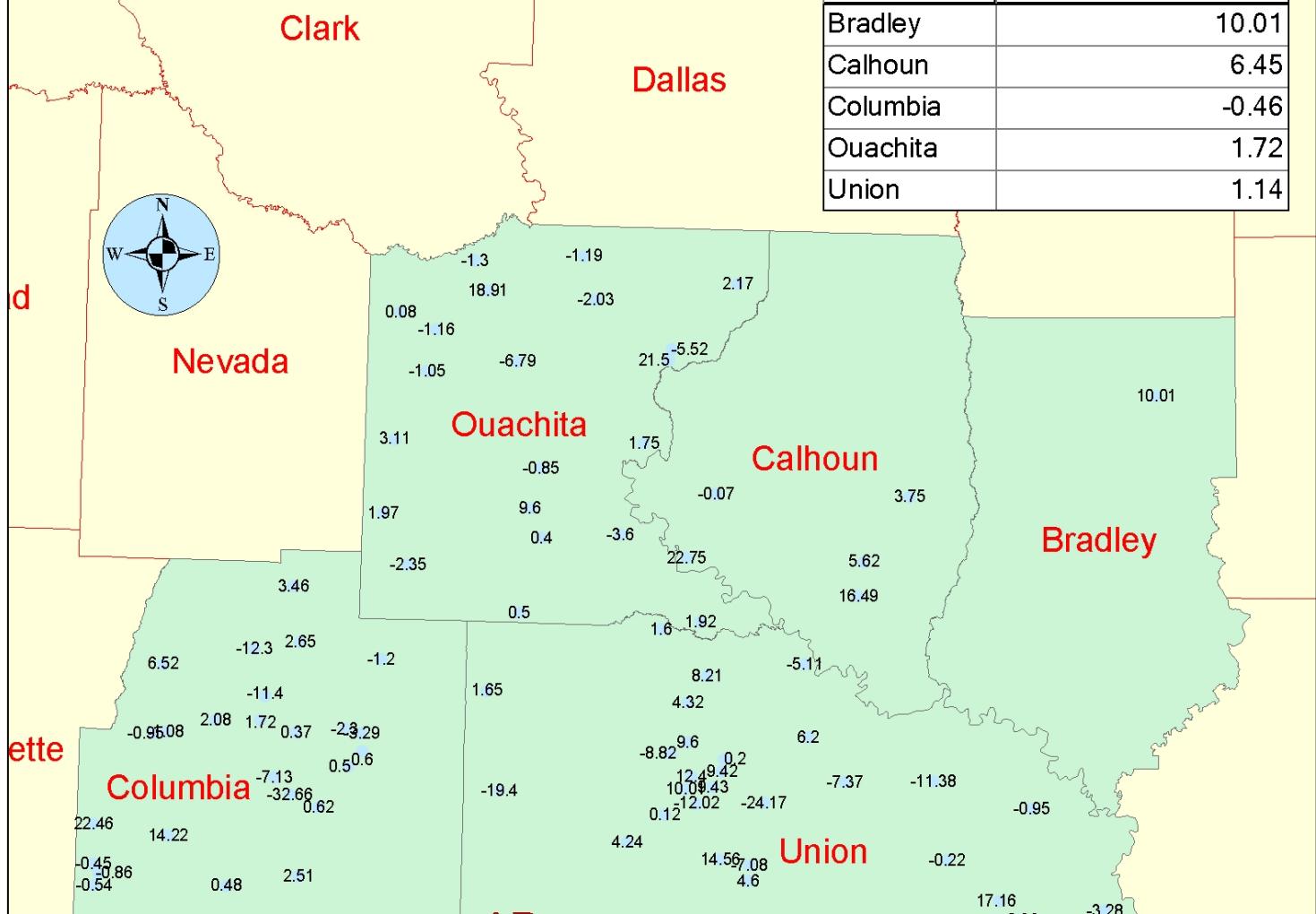
Declines during this time period ranged from -10.5 feet in Lonoke County, to -5.61 feet in Arkansas County. (Fig.12)

For the alluvial aquifer in the Grand Prairie Study Area the USGS Conjunctive Use Optimization Model indicated that the ground-water use in this area is substantially more than is sustainable. Based on the 1997 data, Jefferson County could sustain 76% of the actual pumping rate, Monroe County 74%, Prairie County 50%, Arkansas County 47%, and Lonoke County 42%. The Memphis District of the U.S. Army Corps of Engineers has currently received approval and funding to initiate construction of the White River pumping station for the Grand Prairie Irrigation Project. Once in place, this project is expected to significantly help reduce these counties' unmet demands for irrigation.

On November 15, 2001, ASWCC issued findings of fact and conclusions of law and a Commission order including all of Arkansas County within the Critical Ground Water Area. On December 10, 2001, the Commission filed its order with the Southern District of Arkansas County Circuit Court with a motion to dismiss the judicial review of its administrative decision. The petitioners have objected to the dismissal of the review and the motion is currently awaiting hearing before the Arkansas County Circuit Court. Also, Stewards of the Land, a group of land owners from southeast Arkansas County, have filed suit in Arkansas County Circuit Court -- Southern Division for judicial review of the November 15, 2001 ASWCC order. The administrative record has been filed with the court by ASWCC. The case is awaiting the beginning of the review process.

**2002-2003 South Arkansas Study Area
Water Level Changes
(Sparta/Memphis Aquifer)**

County	Avg. County ft.
Bradley	10.01
Calhoun	6.45
Columbia	-0.46
Ouachita	1.72
Union	1.14



South Arkansas Study Area 1 year change:
Average Change= 1.15
36 of 82 wells show declines



• Wells in the Study Area
South Arkansas Study Area

Fig. 4

**1998-2003 South Arkansas Study Area
Water Level Changes
(Sparta/Memphis Aquifer)**

County	Avg. Change ft.
Bradley	-2.58
Calhoun	12.00
Columbia	11.26
Ouachita	1.90
Union	2.67

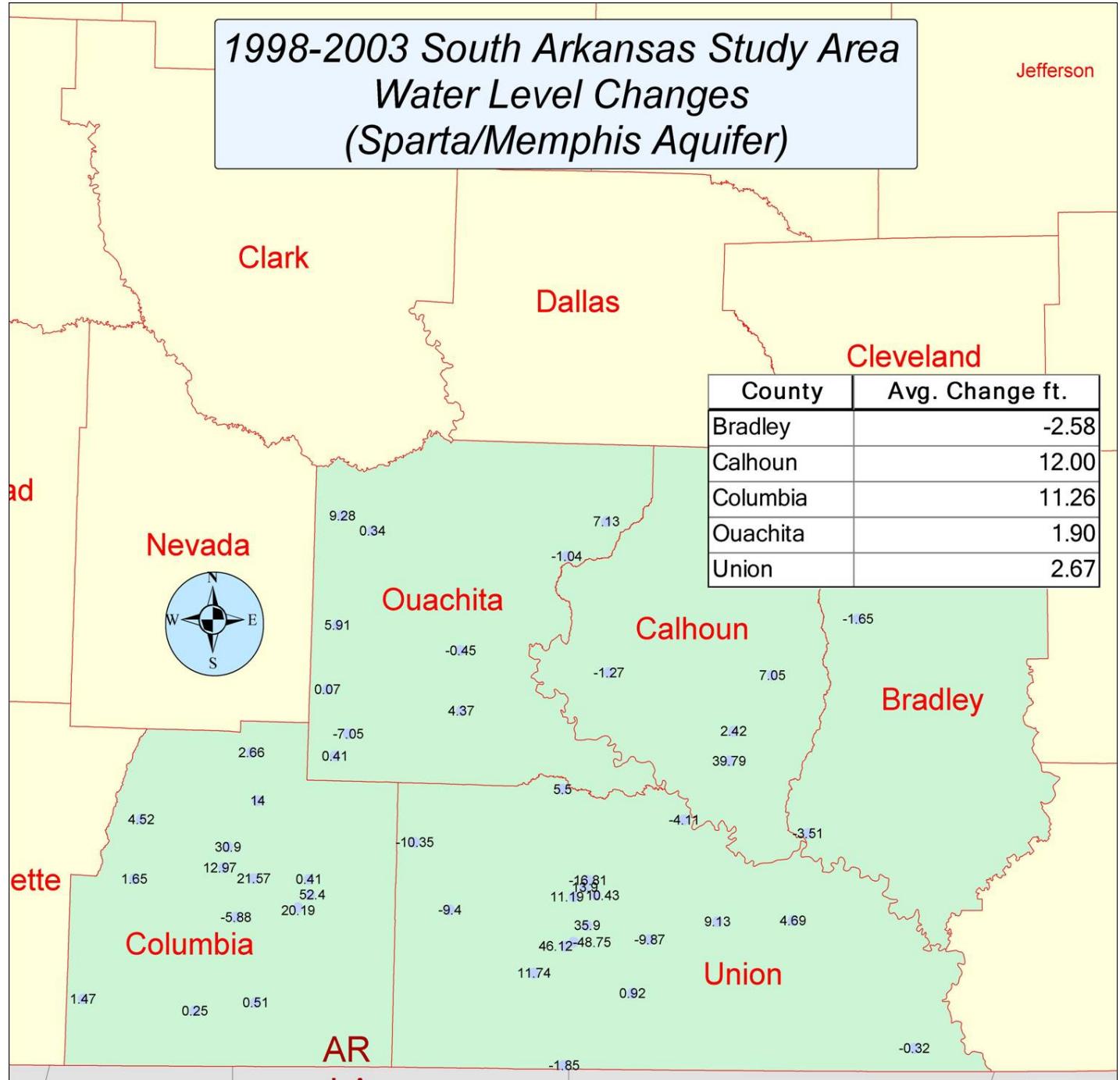
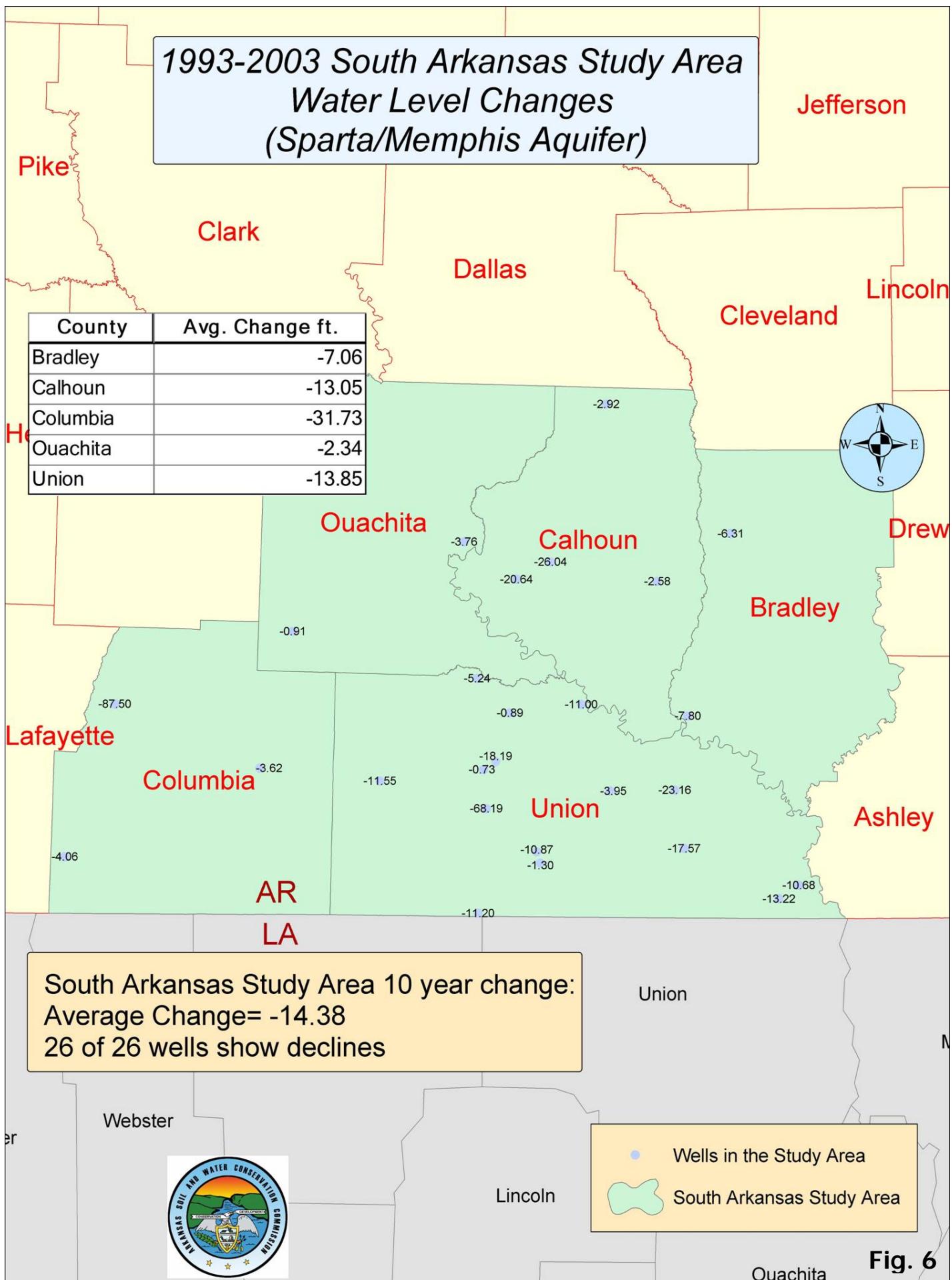


Fig. 5



2002-2003 Grand Prairie Study Area Water Level Changes (Sparta/Memphis Aquifer)



Fa

Wells in the Study Area



Grand Prairie Study Area

Pulaski

Lonoke

Prairie

Monroe

County	Avg. Change ft.
Arkansas	2.39
Jefferson	5.16
Lonoke	2.93
Prairie	-0.03

6.08
1.73 2.25
1.75

1.25 13.63
-2.77 4.06

0.68

7 6.85

-1.16

2.04

5.45

15.75

10.39

12.77

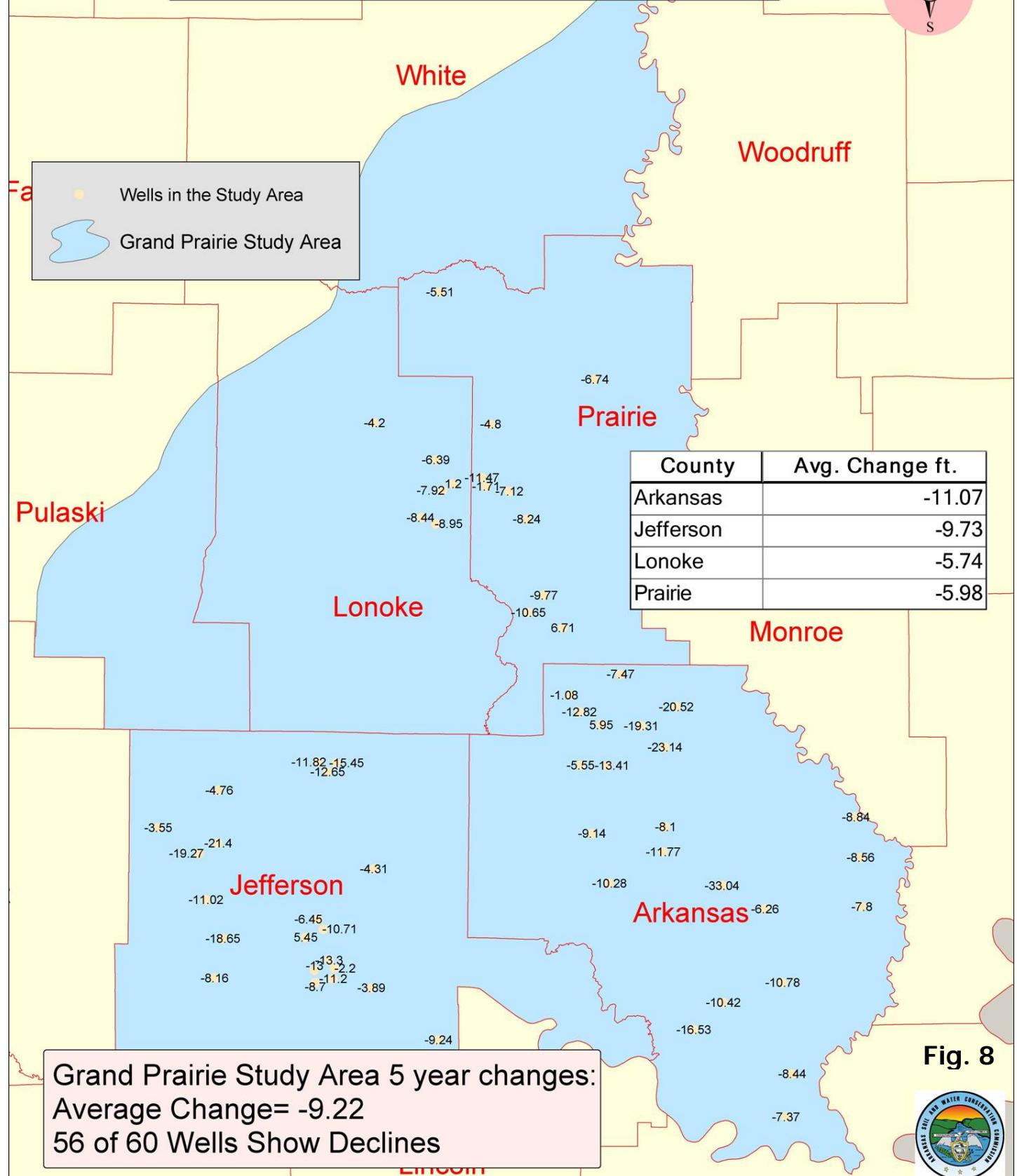
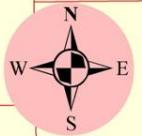
Lincoln

Grand Prairie Study Area 1 year changes:
Average Change= 2.73
21 of 65 Wells Show Declines

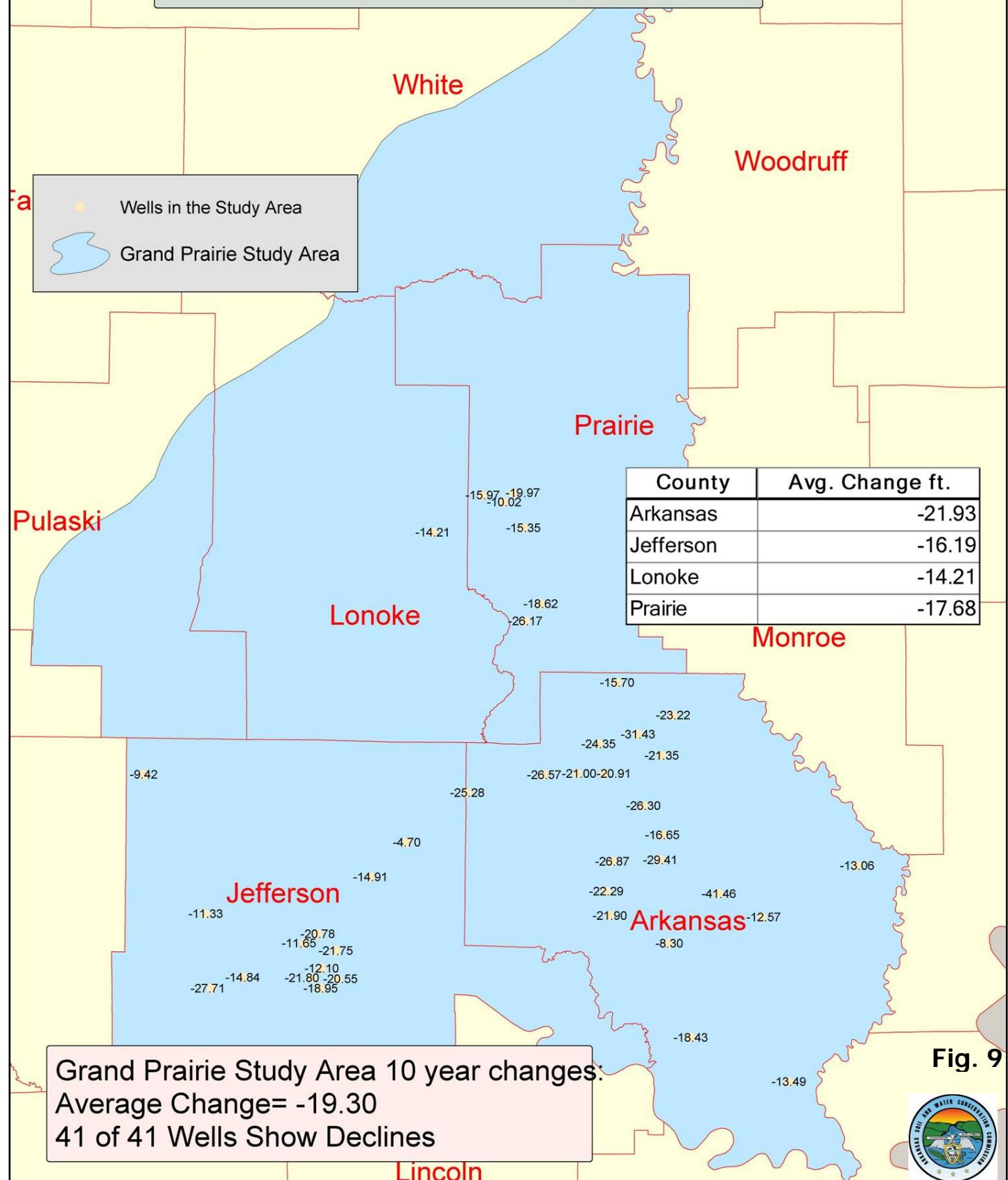


Fig. 7

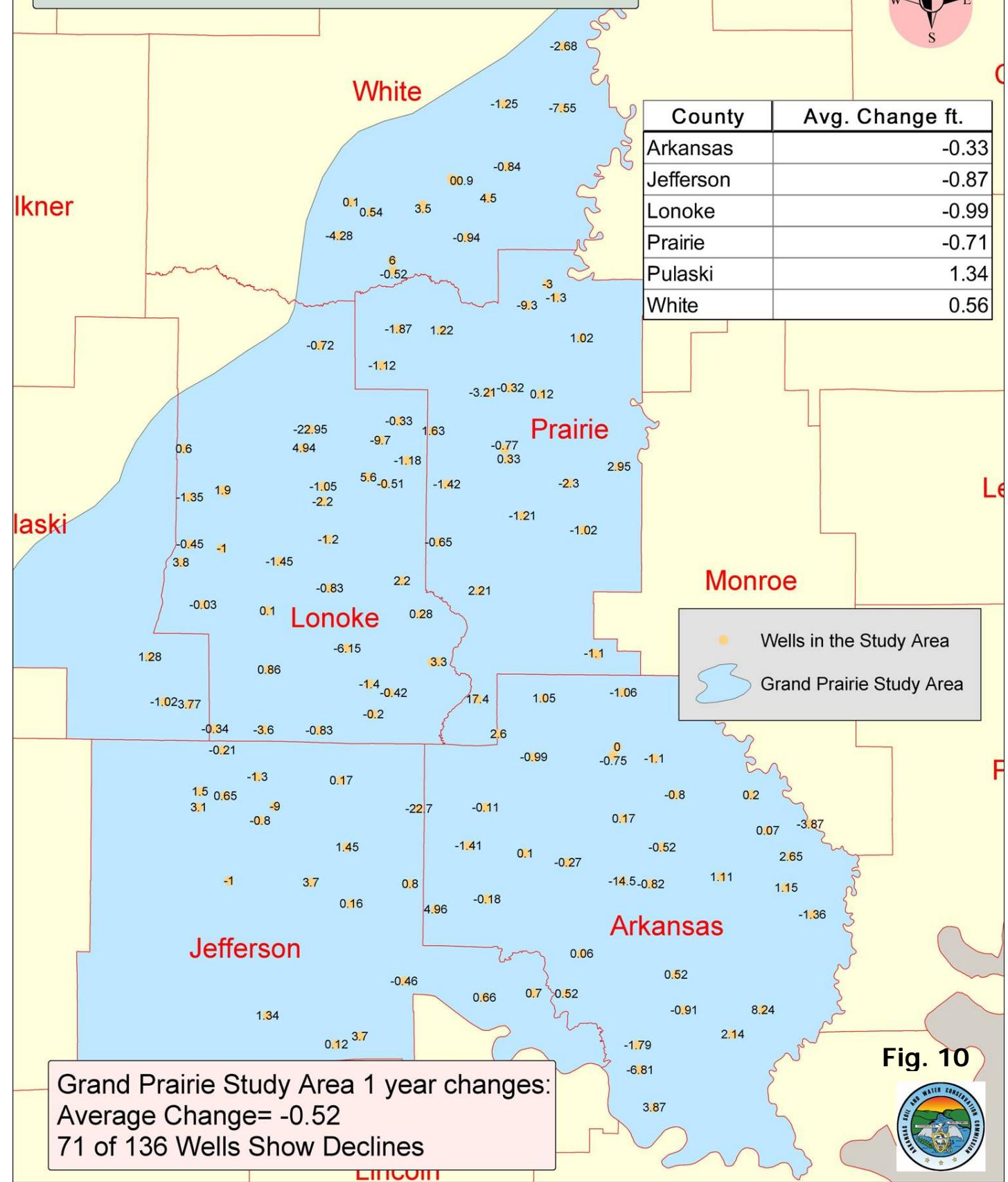
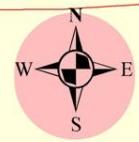
1998-2003 Grand Prairie Study Area Water Level Changes (Sparta/Memphis Aquifer)



1993-2003 Grand Prairie Study Area Water Level Changes (Sparta/Memphis Aquifer)

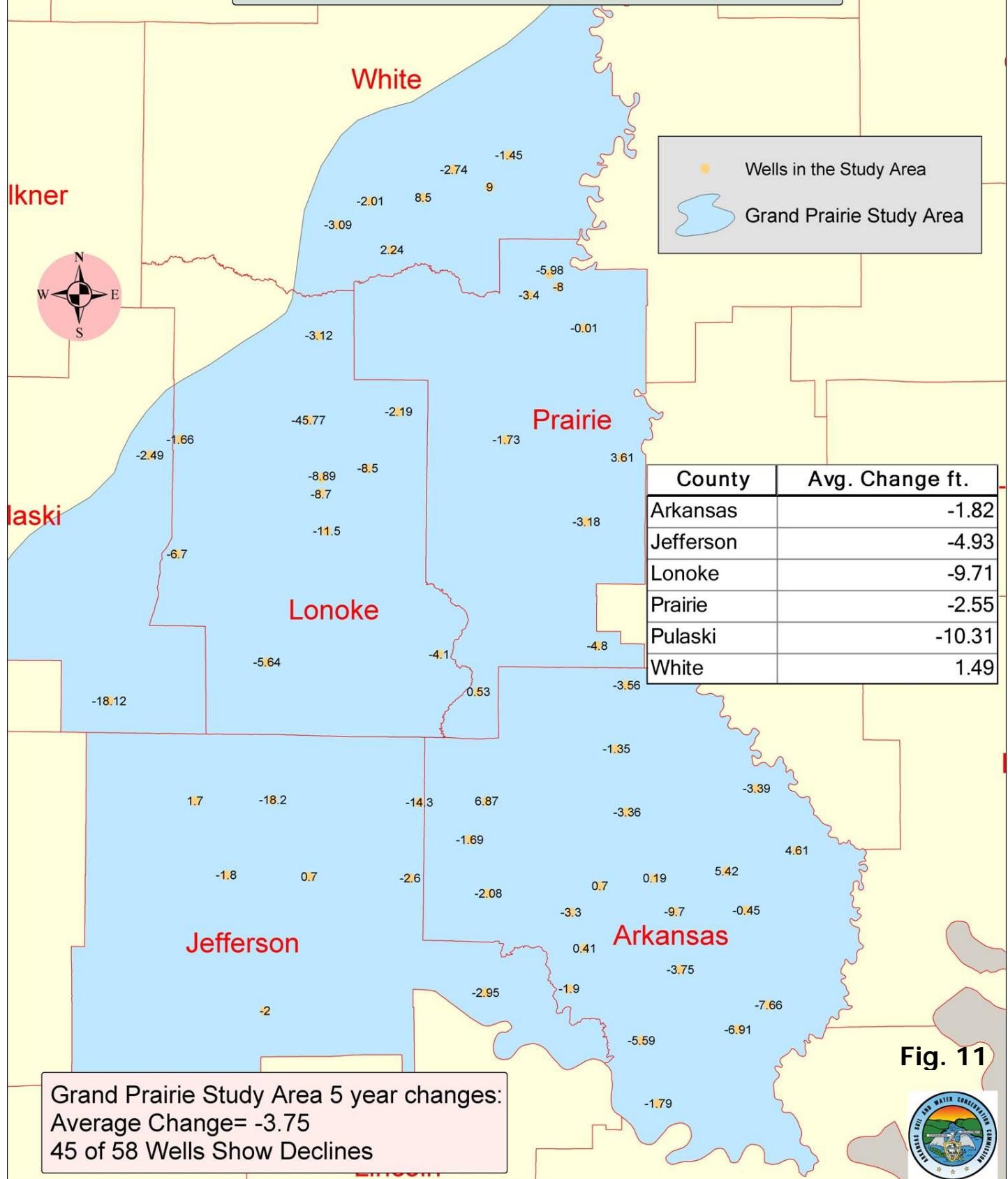


2002-2003 Grand Prairie Study Area Water Level Changes (Alluvial Aquifer)



Cleburne

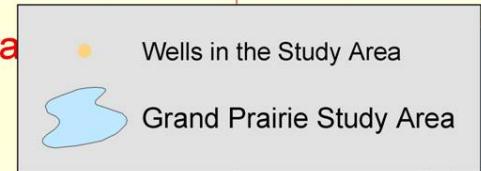
1998-2003 Grand Prairie Study Area Water Level Changes (Alluvial Aquifer)



1993-2003 Grand Prairie Study Area Water Level Changes (Alluvial Aquifer)



Fa



COUNTY	Avg. Change ft.
Arkansas	-5.61
Jefferson	-8.95
Lonoke	-10.5
Prairie	-6.05
White	2.30

Pulaski

Prairie

Monroe

Lonoke

Jefferson

Arkansas

Grand Prairie Study Area 10 year changes:
Average Change = -6.76
20 of 23 Wells Show Declines

Lincoln

Fig. 12



CACHE STUDY AREA

The Cache Study Area is defined as the 7300 square mile region between Crowley's Ridge to the east, the Fall Line to the west, the state line to the north, and the White River to the south. (Ackerman, 1996) This study area includes portions of Craighead, Poinsett, Cross, St. Francis, Lee, Phillips, Monroe, Woodruff, Jackson, Lawrence, Greene, and Clay Counties.

Monitoring of the alluvial aquifer in this study area from 2002-2003 showed the majority of counties having a decline in ground-water measurements with the exception of Clay County having an average change of +0.51 feet, and Phillips County an average change of +0.11 feet. During this same time Craighead County showed an average decline of -0.66 feet, Cross County -0.62 feet, Greene County -1.14 feet, Independence County -2.38 feet, Jackson County -0.47 feet, Lawrence County -0.02 feet, Lee County -0.09 feet, Monroe County -0.75 feet, Poinsett County -2.04, Randolph County - 2.40, St. Francis -2.26 feet, and Woodruff County -1.18 feet respectively. During this one-year monitoring period 281 wells were monitored for water level change in the alluvial aquifer for the Cache Study Area. Of these wells, 154 (54.8%) showed an average decline in static water level. The average change for this time period throughout this study area was -0.79 feet. (Fig.13)

The alluvial aquifer in the Cache Study Area was also evaluated for change in water levels for a 5-year time period from 1998 to 2003. For this period all the counties showed average declines ranging from -0.08 feet in Phillips County, to -7.68 in Cross County. The other counties' declines during this time were; Clay -2.85 feet, Craighead -6.04 feet, Greene -5.27 feet, Independence -4.88 feet, Jackson -5.82 feet, Lawrence -5.14 feet, Lee -3.69 feet, Monroe -4.62 feet, Poinsett -7.55 feet, Randolph -3.68 feet, St. Francis -5.35 feet, and Woodruff -3.91 feet, respectively. The entire Cache Study Area showed an average change of -5.82 feet in the alluvial aquifer during this 5-year monitoring period. Out of the 193 wells monitored, 169 (87.6%) of these showed average declines. (Fig.14)

Average change in 151 wells was also compared in the alluvial aquifer for a 10 year timeframe, for the Cache Study Area. One hundred and thirty-six of the 151 wells

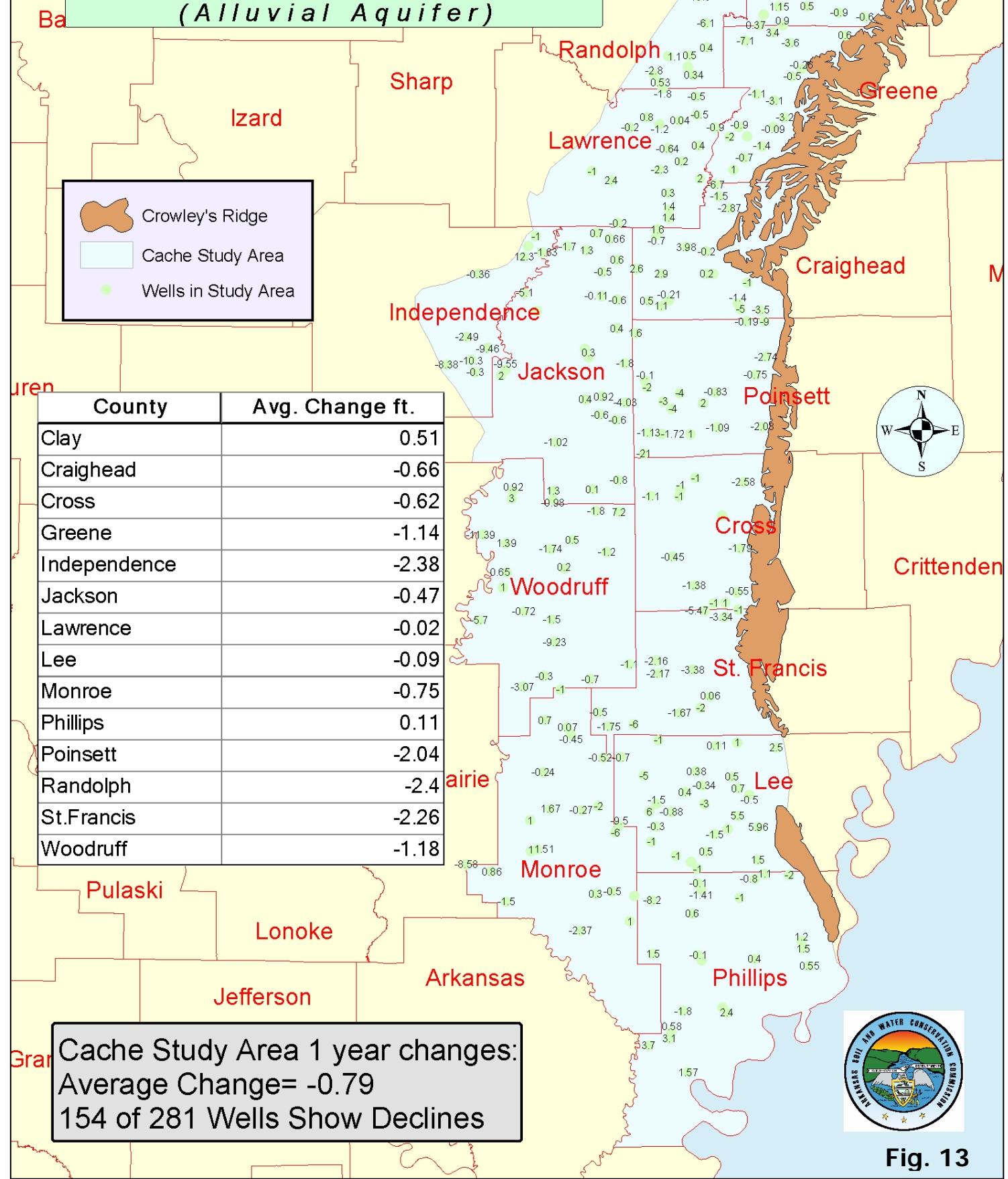
(90.1%) showed an average decline. Every county in the study area showed an average decline in static water-levels ranging from -2.40 feet in Independence County, to -12.58 feet in Cross County. The other counties' declines during this time were; Craighead 8.94 feet, Greene -8.47 feet, Jackson -8.09 feet, Lawrence 6.42 feet, Lee -9.01 feet, Monroe -7.35 feet, Phillips -2.43 feet, Poinsett -12.22 feet, Randolph -4.77 feet, St. Francis -6.50 feet, and Woodruff -5.02 feet respectively. The average change for the study area over this time was a decline of -7.86 feet. (Fig. 15)

Monitoring of the Sparta/Memphis Aquifer in the Cache Study Area from 2002 to 2003 shows that the study area had an overall average decline in static water level of -0.79 feet. Although there are not as many irrigation wells in the Sparta/Memphis Aquifer as there are in the alluvial aquifer in this study area, there has been an increase in recent years as the water level in the alluvial aquifer continues to drop. Eighteen of the 32 wells (56.3%) monitored showed declines during this time period. The counties that showed negative average changes were Craighead -0.73 feet, Cross -1.00 foot, Monroe -1.67 feet, and Phillips -3.26 feet respectively. (Fig.16)

During the 1998 to 2003 monitoring period the Sparta/Memphis Aquifer in the Cache Study Area had an average water level decline of -9.05 feet, with 8 of the 8 wells monitored showing decline. Poinsett County showed the largest average change with a -10.04 foot decline. Craighead and Monroe counties showed significant average declines during this time as well, with changes of -7.07 and -7.57 feet respectively. (Fig. 17)

The 10 year average change for the Sparta Aquifer in the Cache Study Area was -7.92 feet, with 11 of 11 wells showing declines in static water level. The declines ranged from -2.84 feet in Monroe County, to -12.85 feet in Lee County. (Fig.18)

**2002-2003 Cache Study Area
Water Level Changes
(Alluvial Aquifer)**



**1998-2003 Cache Study Area
Water Level Change
(Alluvial Aquifer)**

Baxt

Izard

Sharp

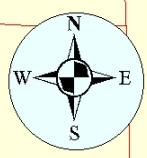
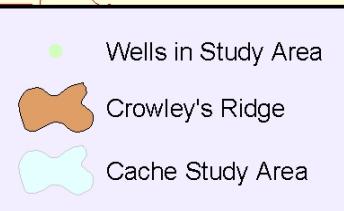
Randolph

Lawrence

Clay

Greene

Mis



Independence

Avg. Change ft.

County

County	Avg. Change ft.
Clay	-2.85
Craighead	-6.04
Cross	-7.68
Greene	-5.27
Independence	-4.88
Jackson	-5.82
Lawrence	-5.14
Lee	-3.69
Monroe	-4.62
Phillips	-0.08
Poinsett	-7.55
Randolph	-3.68
St.Francis	-5.35
Woodruff	-3.91

Jackson

Poinsett

Crittenden

St. Francis

airie

St. Francis

Lee

Pulaski

Lonoke

Arkansas

Arkansas

Phillips

Cache Study Area 5 year changes:
Average Change= -5.82
169 of 193 Wells Show Declines



Fig. 14

**1993-2003 Cache Study Area
Water Level Changes
(Alluvial Aquifer)**

Baxter

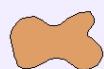
Izard

Sharp

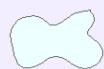
Randolph

Clay

Wells in the Study Area



Crowley's Ridge



Cache Study Area

Lawrence

Greene

Craighead

Mi

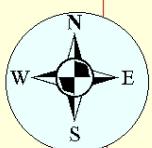
Independence

Jackson

Poinsett

County Avg. Change ft.

Craighead	-8.94
Cross	-12.58
Greene	-8.47
Independence	-2.40
Jackson	-8.09
Lawrence	-6.42
Lee	-9.01
Monroe	-7.35
Phillips	-2.43
Poinsett	-12.22
Randolph	-4.77
St.Francis	-6.50
Woodruff	-5.02



Lonoke

Jefferson

Arkansas

Monroe

Phillips

St. Francis

Lee

Monroe

rie

ie

Fig. 15



Cache Study Area 10 year changes:
Average Change= -7.86
136 of 151 Wells Show Declines

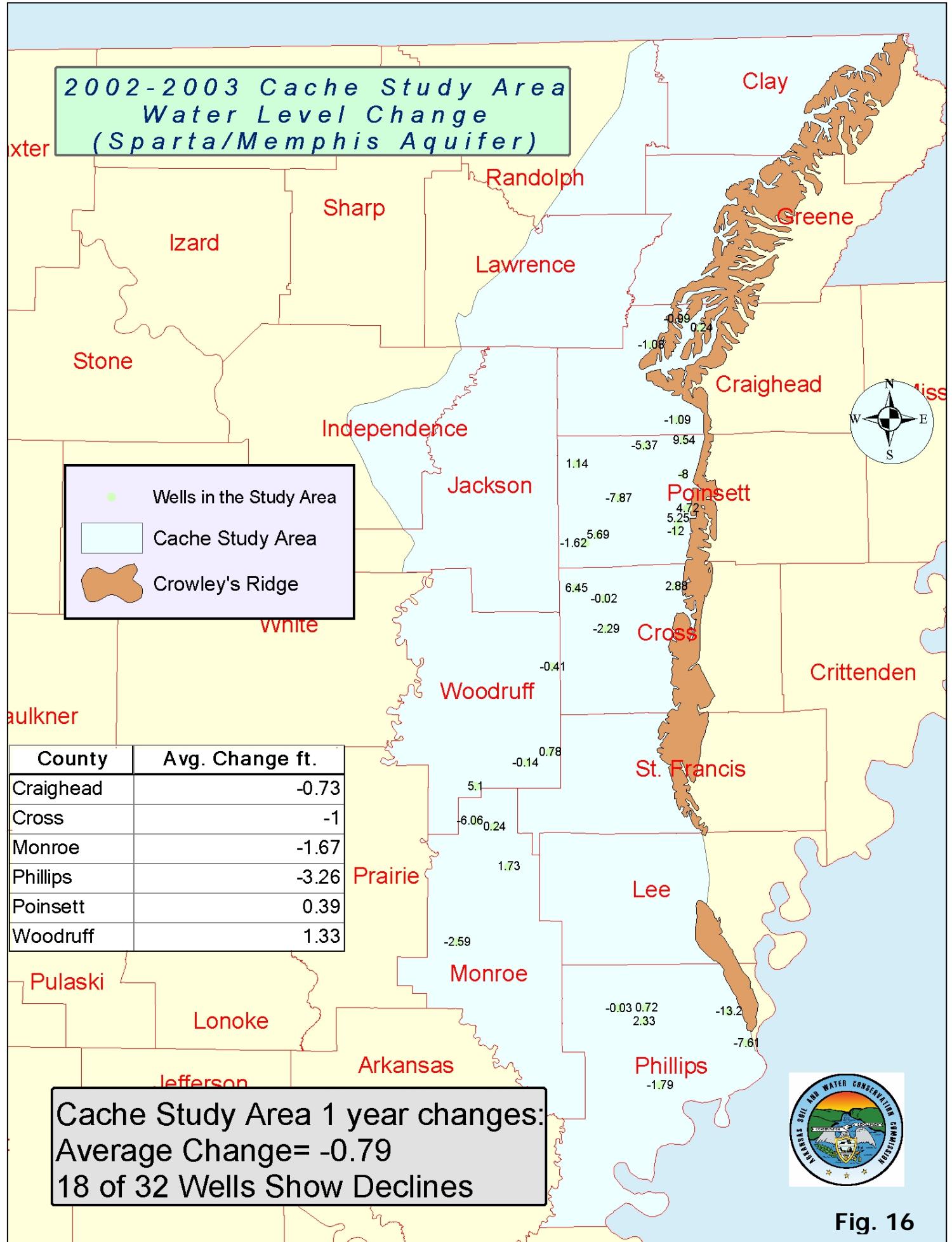


Fig. 16

**1998-2003 Cache Study Area
Water Level Change
(Sparta/Memphis Aquifer)**

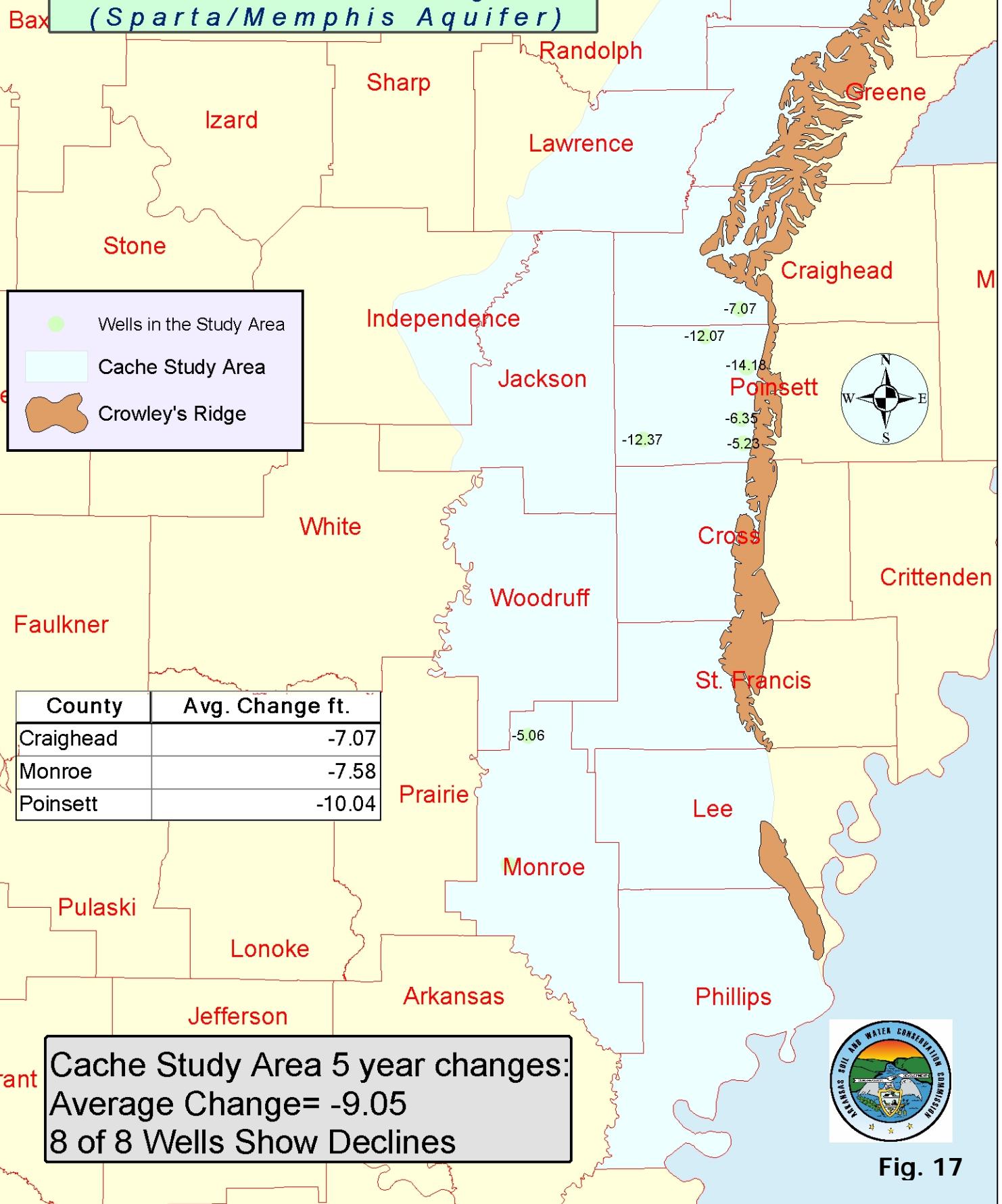


Fig. 17

**1993 - 2003 Cache Study Area
Water Level Change
(Sparta/Memphis Aquifer)**

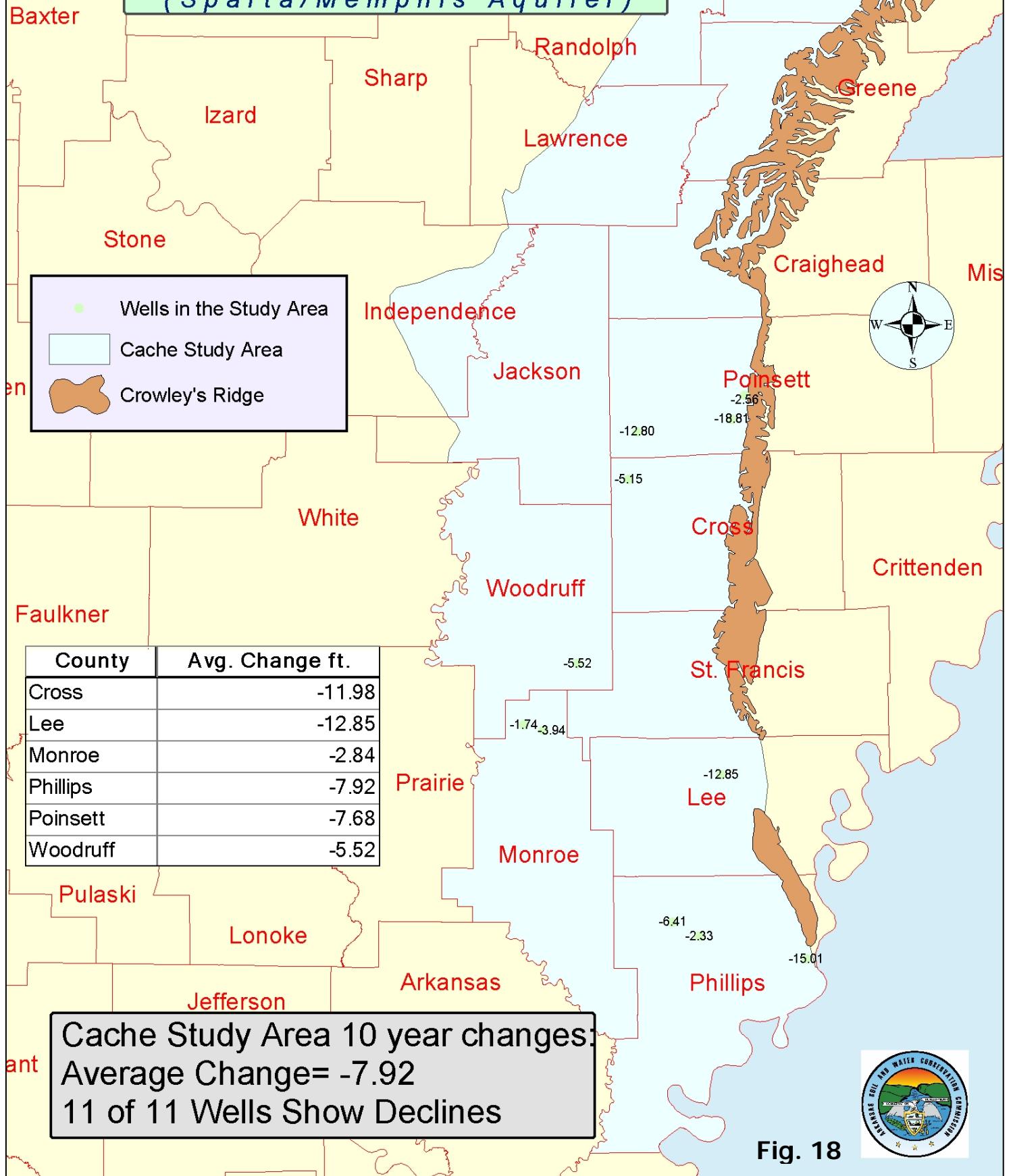


Fig. 18

BOEUF-TENSAS STUDY AREA

The Boeuf-Tensas study area in southeast Arkansas is comprised of Ashley, Chicot, Desha, Drew, and Lincoln Counties. This hydrologic basin extends into Louisiana but for the purposes of this study will be bounded by the Arkansas state line to the south.

The alluvial aquifer data in the Boeuf-Tensas Study Area for the monitoring period of 2002-2003 showed declines in all counties except Ashley, which had an average change of +1.29. All other counties showed an average negative change during this time, with Chicot averaging -3.29, Desha -0.20, Drew -0.87, and Lincoln -0.15 feet respectively. The average change for the entire study area during this time was -0.26 feet, with 38 of 72 wells (52.8%) showing declines. (Fig.19)

During the 5-year monitoring period from 1998 to 2003 all the counties with the exception of Ashley again showed declines in the static water-level averages in the alluvial aquifer. Ashley County had an average change of +4.84 feet during this 5 year period. Chicot County had the greatest average decline with -8.73 feet, followed by Lincoln County -7.72 feet, Desha County -5.48 feet, and Drew County -3.57 feet respectively. The entire study area had an average 5-year change of -4.22 feet, with 34 of 42 (81.0%) wells monitored showing declines. (Fig.20)

The data for the 10-year change in the Boeuf-Tenses shows once again that Ashley County is the only county in the study area with an average positive change, with +0.27 feet. All other counties in this study area had average negative change with the greatest being Chicot -27.00 feet, followed by Lincoln -10.24 feet, Drew -7.16 feet, and Desha -7.43 feet respectively. The entire study area showed an average change of -6.98 feet during this 10 year period in the alluvial aquifer with 26 of 30 (86.7%) wells monitored showing declines. (Fig. 21)

Continued monitoring of the ground-water levels in the Sparta Aquifer of the Boeuf-Tensas Study Area shows mixed results mostly because of the lack of wells that are drilled into the aquifer in this part of the state. The ASWCC as well as the USGS continue to add Sparta Aquifer wells to the database from this study area and they are located.

During the 2002-2003 monitoring period the Bouuf-Tenses Study Area showed an average decline of -0.22 feet in the Sparta/Memphis Aquifer, with 7 of the 14 wells monitored showing declines. Desha County had an average increase of +0.90 feet, and Drew County + 5.69 feet during this time. Ashley County had an average change of -3.62 feet, and Lincoln an average of -3.30 feet. (Fig.22)

During the 5-year monitoring period, from 1998 to 2003, 6 of the 9 wells monitored in the Sparta/Memphis Aquifer showed water-level declines in this study area. Ashley County had a change of +15.76 feet during this monitoring period, however only one well was monitored for the Sparta Aquifer in this county due to the sparsity of wells in this area. Desha County showed an average change of -6.52, while Drew County had a +0.08 foot average change for this monitoring period. The entire study area during this monitoring period had an average decline of -1.85 feet. (Fig.23)

From 1993 to 2003 8 of the 9 Sparta wells monitored in the Boeuf-Tensas showed declines, with the study area showing a -11.49 foot average change. Once again, it should be noted there are few wells available for monitoring in Sparta/Memphis Aquifer in this study area due to the lack of wells drilled into this formation there. (Fig.24)

ST. FRANCIS STUDY AREA

The St. Francis Study Area is defined as the area west of the Mississippi River, east of Crowley's Ridge, and south and east of the subcrop of the McNairy-Nacatocah aquifer (6900 square miles) (Ackerman, 1996). For the purpose of this report, only the area inside the boundaries of Arkansas is considered.

During the 2002-2003 monitoring period there were both declines and increases in average static water-levels in the alluvial aquifer throughout the study area. The majority of the counties in this study area showed a slight rise in the average static water level in the alluvial aquifer. Cross County had an average change of +0.71 feet, Poinsett County +2.62 feet, Craighead County +0.54 feet, Lee County +1.18 feet, and Crittenden County +0.56 feet respectively. The counties showing an average decline

2002-2003 Boeuf-Tensas Study Area Water Level Changes (Alluvial Aquifer)

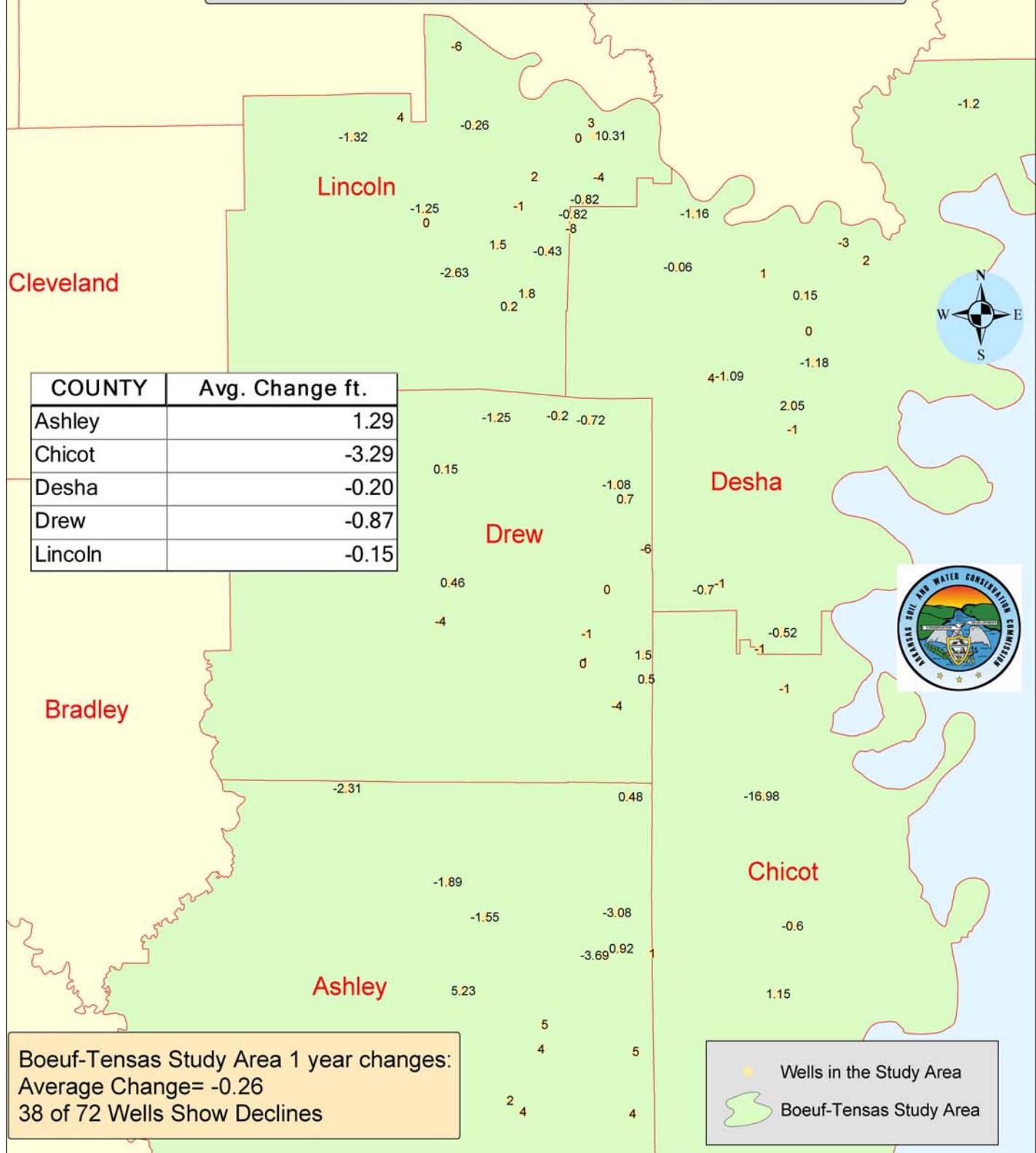


Fig. 19

1998-2003 Boeuf-Tensas Study Area Water Level Changes (Alluvial Aquifer)

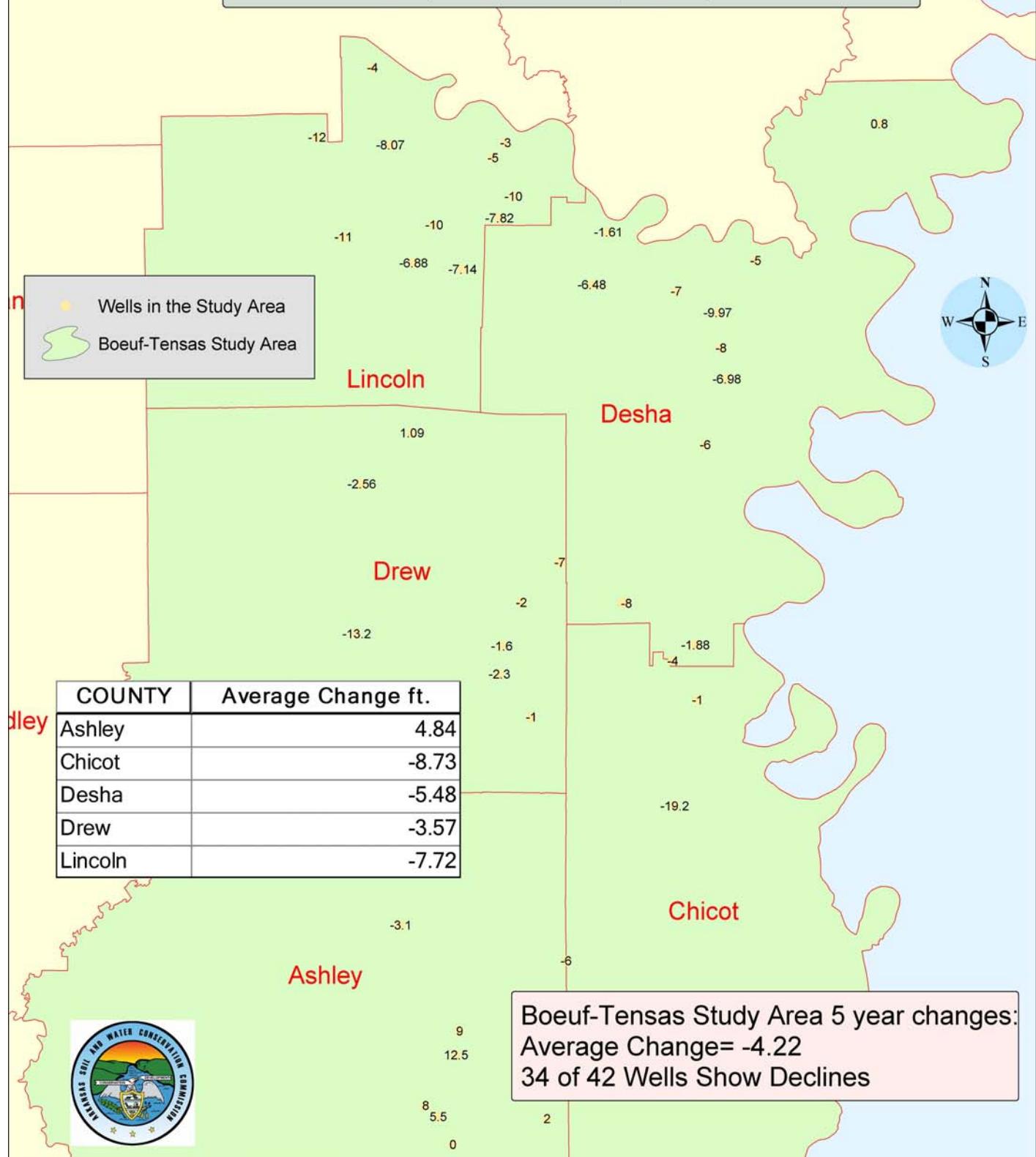
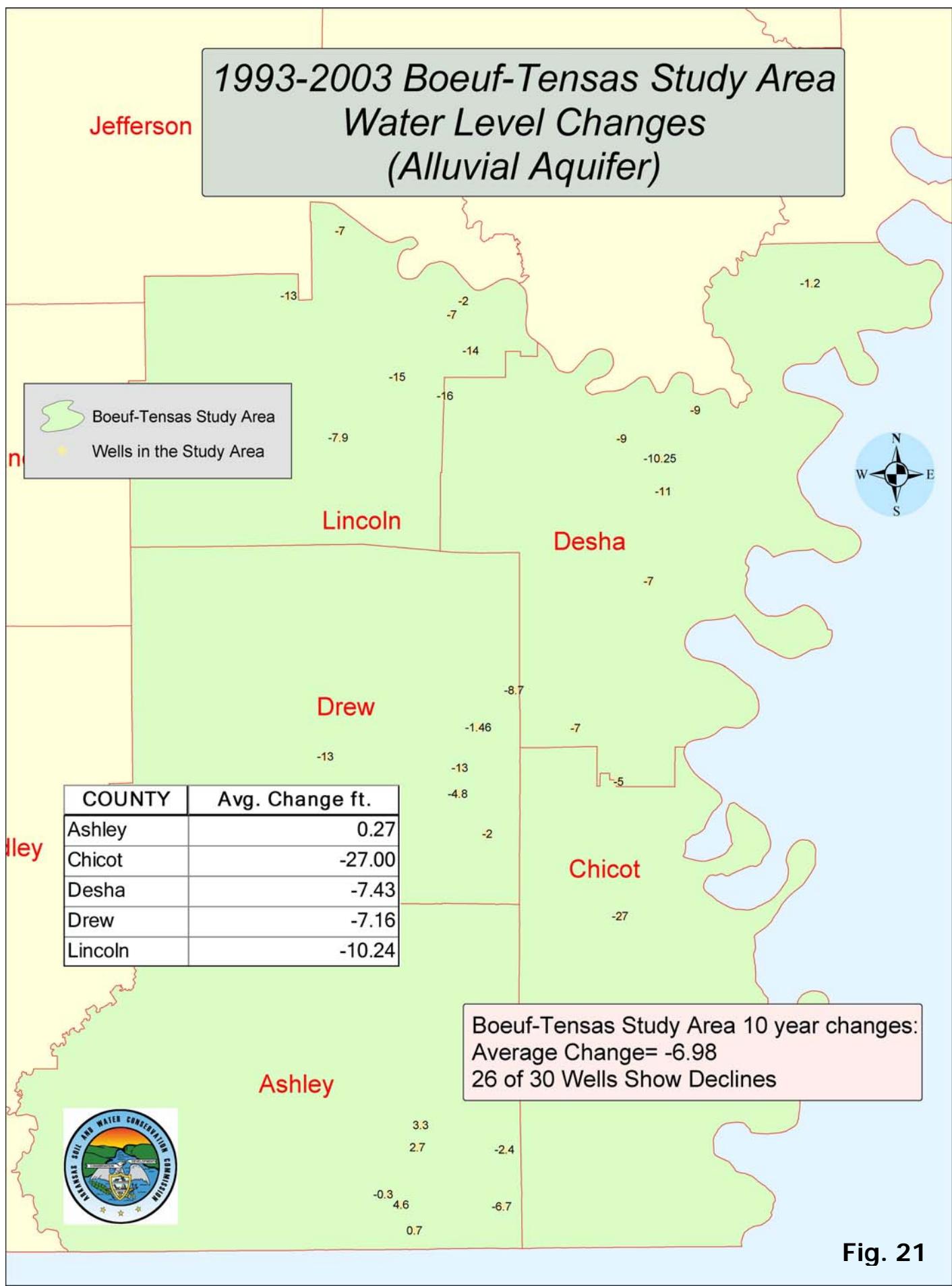
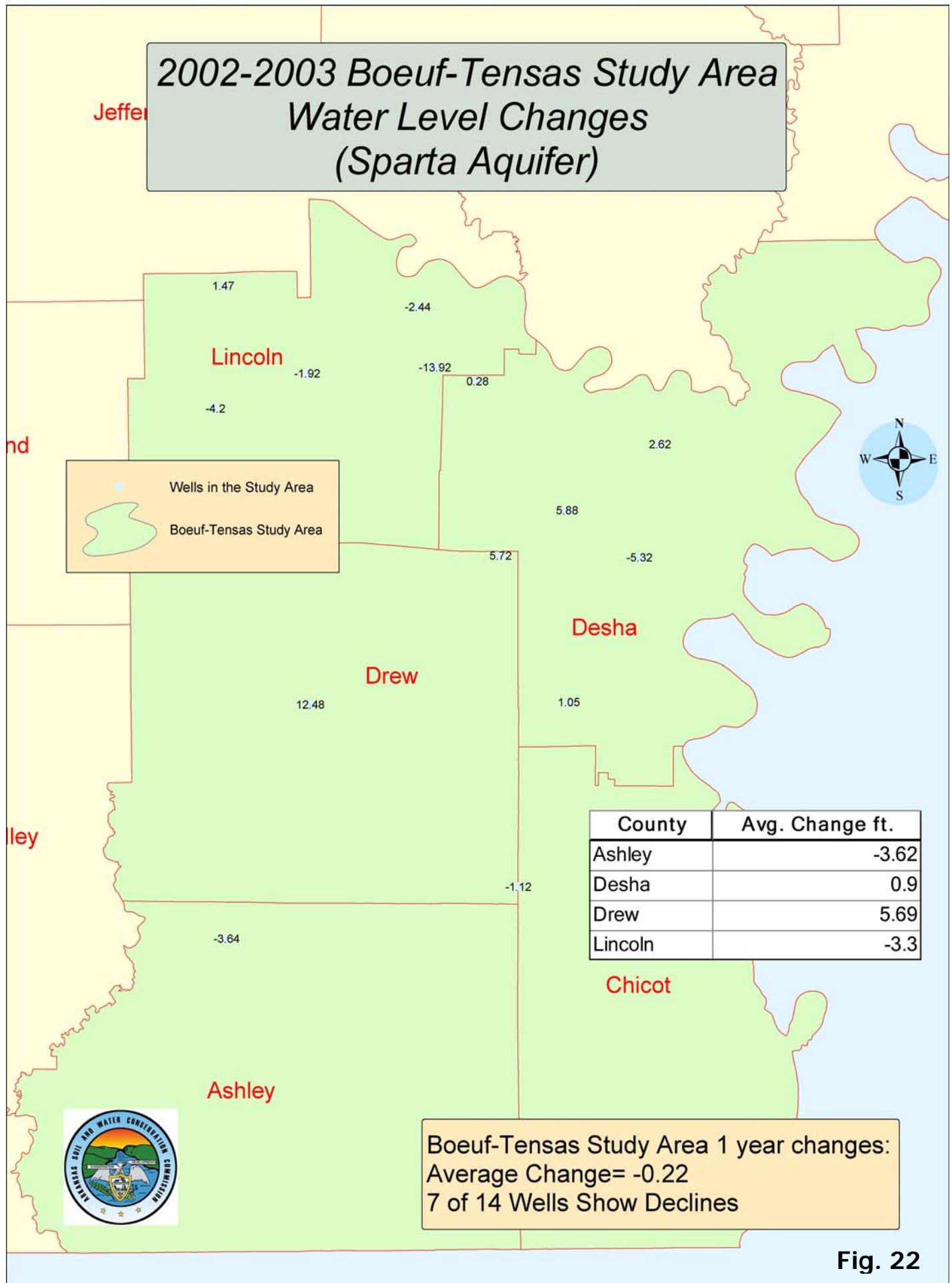


Fig. 20

1993-2003 Boeuf-Tensas Study Area Water Level Changes (Alluvial Aquifer)



2002-2003 Boeuf-Tensas Study Area Water Level Changes (Sparta Aquifer)



1998-2003 Boeuf-Tensas Study Area Water Level Changes (Sparta Aquifer)

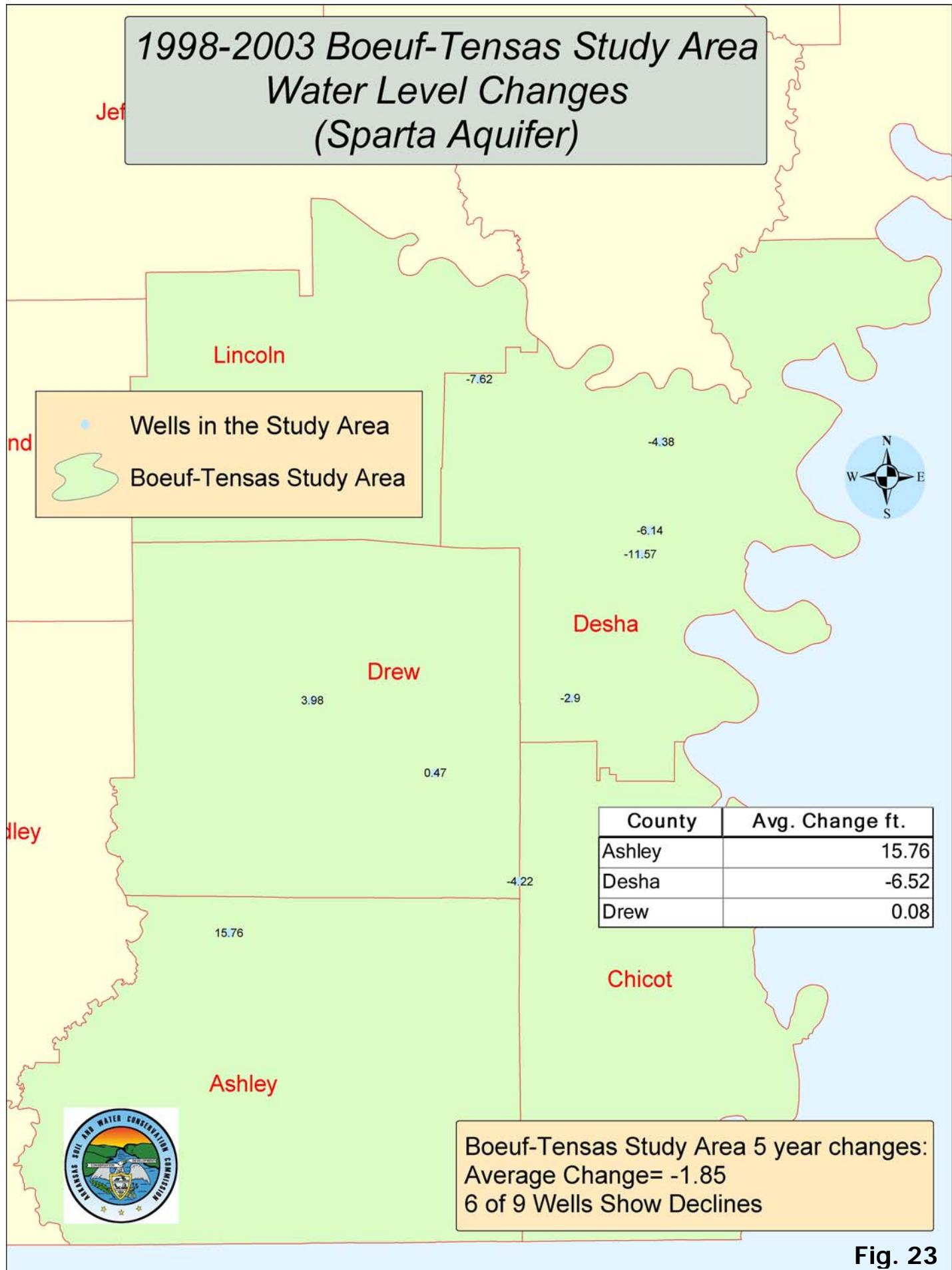


Fig. 23

1993-2003 Boeuf-Tensas Study Area Water Level Changes (Sparta Aquifer)

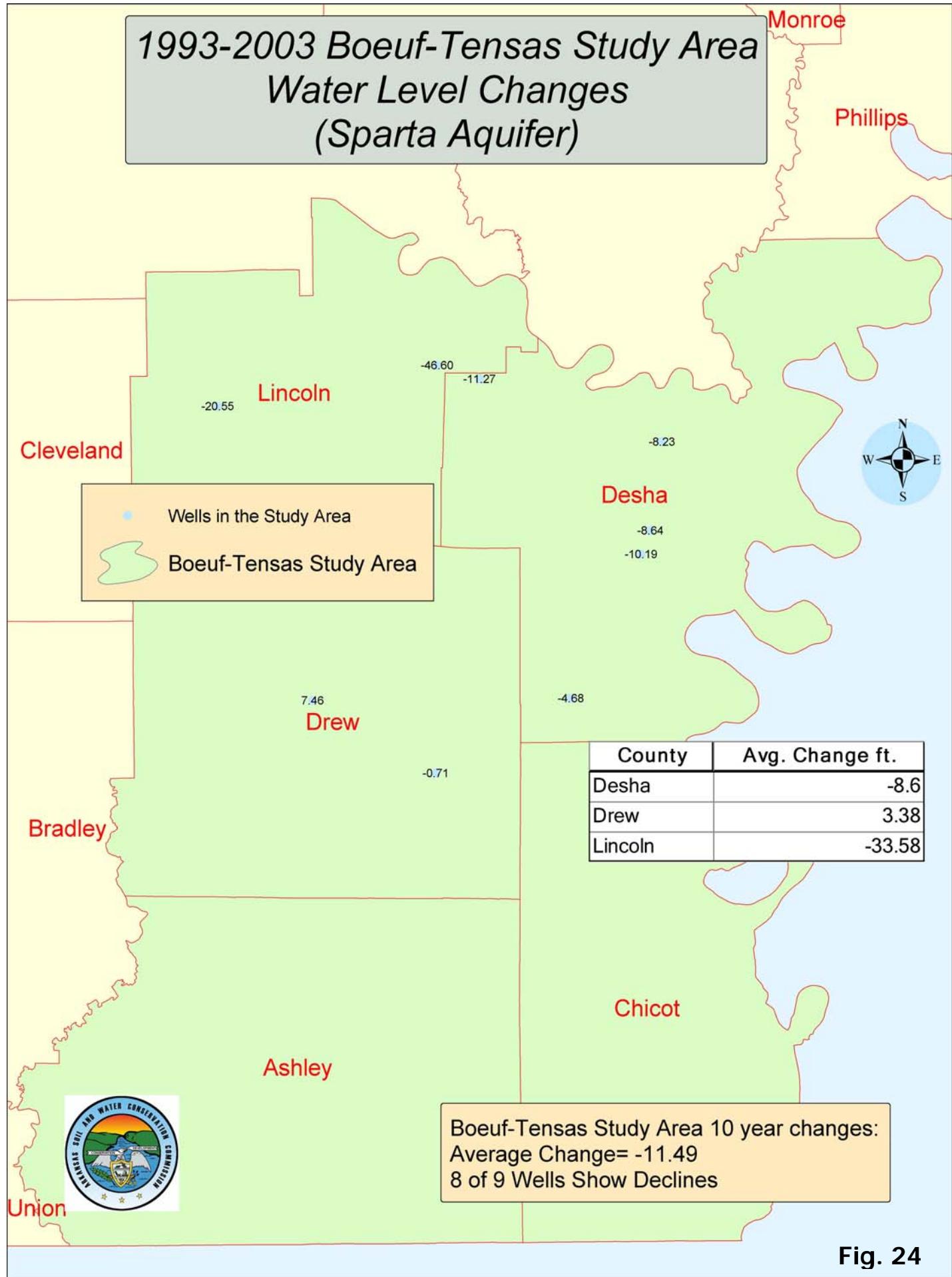


Fig. 24

were St. Francis with a -0.51 foot change, Mississippi with a -0.02 foot average decline, Clay -0.89 feet, and Greene -0.73 feet, respectively. The overall study area had an average static water-level change of +0.29 feet during this time, with 46 of the 116 (39.7%) wells monitored showing declines. (Fig.25)

During the 5-year monitoring timeframe, from 1998 to 2003, most counties in this study area showed an average decline in static water levels in the alluvial aquifer. Greene County had an average decline of -1.80 feet, Mississippi County -0.97 feet, Craighead County -0.96 feet, Cross County -8.26 feet, Crittenden County -1.85, and St. Francis County -3.83 feet respectively. Counties with average increases during this monitoring period were Clay +0.44 feet, Lee +0.17 feet, and Poinsett +0.71 feet. The alluvial aquifer in this study area had an average change of -1.55 feet, with 51 of the 82 (62.2%) wells monitored showing declines. (Fig.26)

A 10-year average change was also done in the St. Francis Study Area for the alluvial aquifer static water levels. During this period, Clay and St. Francis counties showed a net average change of zero in static water levels. Lee County was the only county with a positive average change, having a +1.10 average. All the other counties had an average decline during this period with Craighead County a -1.02 foot change, Crittenden County -5.59 feet, Cross County -7.48 feet, Greene County -3.86 feet, Mississippi County -3.49 feet, and Poinsett County -1.25 feet respectively. There was an average change of -3.08 feet over the entire study area for this 10-year period, with 41 of the 56 (73.2%) wells monitored showing declines. (Fig. 27)

Just as in the Boeuf-Tensas Study Area, the St. Francis Study Area has a limited number of wells drilled into the Sparta/Memphis Aquifer. This should be taken into account when looking at the county changes in the figures. There are more wells being drilled into these areas, however, as the water level in the alluvial aquifer continues to decline, and the USGS as well as the ASWCC will continue to add data-points in these areas.

From 2002 to 2003 there were 10 wells monitored in the Sparta/Memphis Aquifer in the St. Francis Study Area, 4 of which showed an average decline in static water level. The study area had an average change of -2.04 feet during this time.

**2002-2003 St. Francis Study Area
Water Level Changes
(Alluvial Aquifer)**

Sharp

Lawrence

Greene

Craighead

Mississippi

Poinsett

Cross

Crittenden

St. Francis

White

Woodruff

Prairie

Monroe

Lee

Arkansas

49



County	Avg. Change ft.
Clay	-0.89
Craighead	0.54
Crittenden	0.56
Cross	0.71
Greene	-0.73
Lee	1.18
Mississippi	-0.02
Poinsett	2.62
St. Francis	-0.51

St. Francis Study Area 1 year change:
Average Change= 0.29
46 of 116 wells show declines

- Wells in the Study Area
- Crowley's Ridge
- St. Francis Study Area

Fig. 25

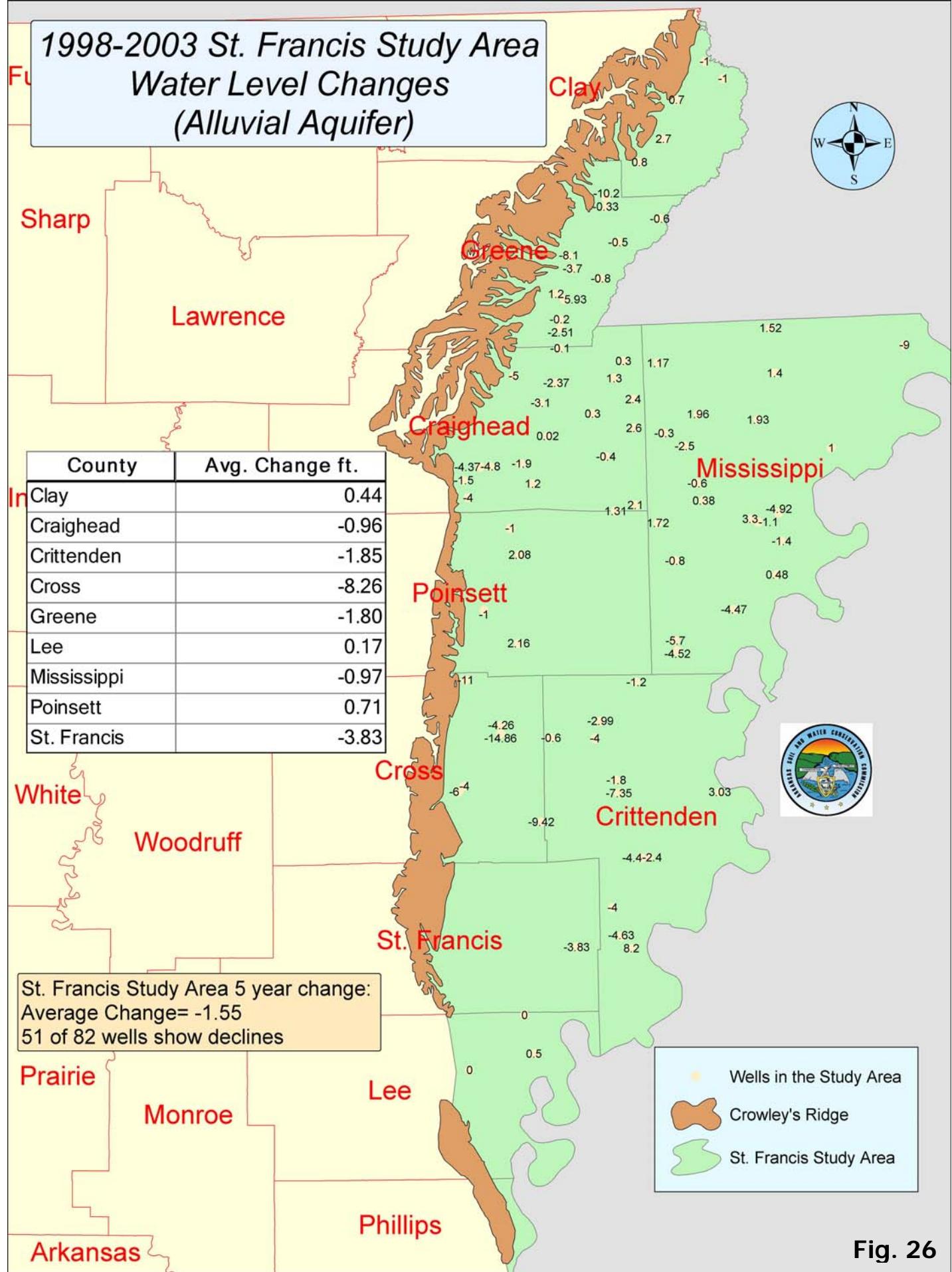


Fig. 26

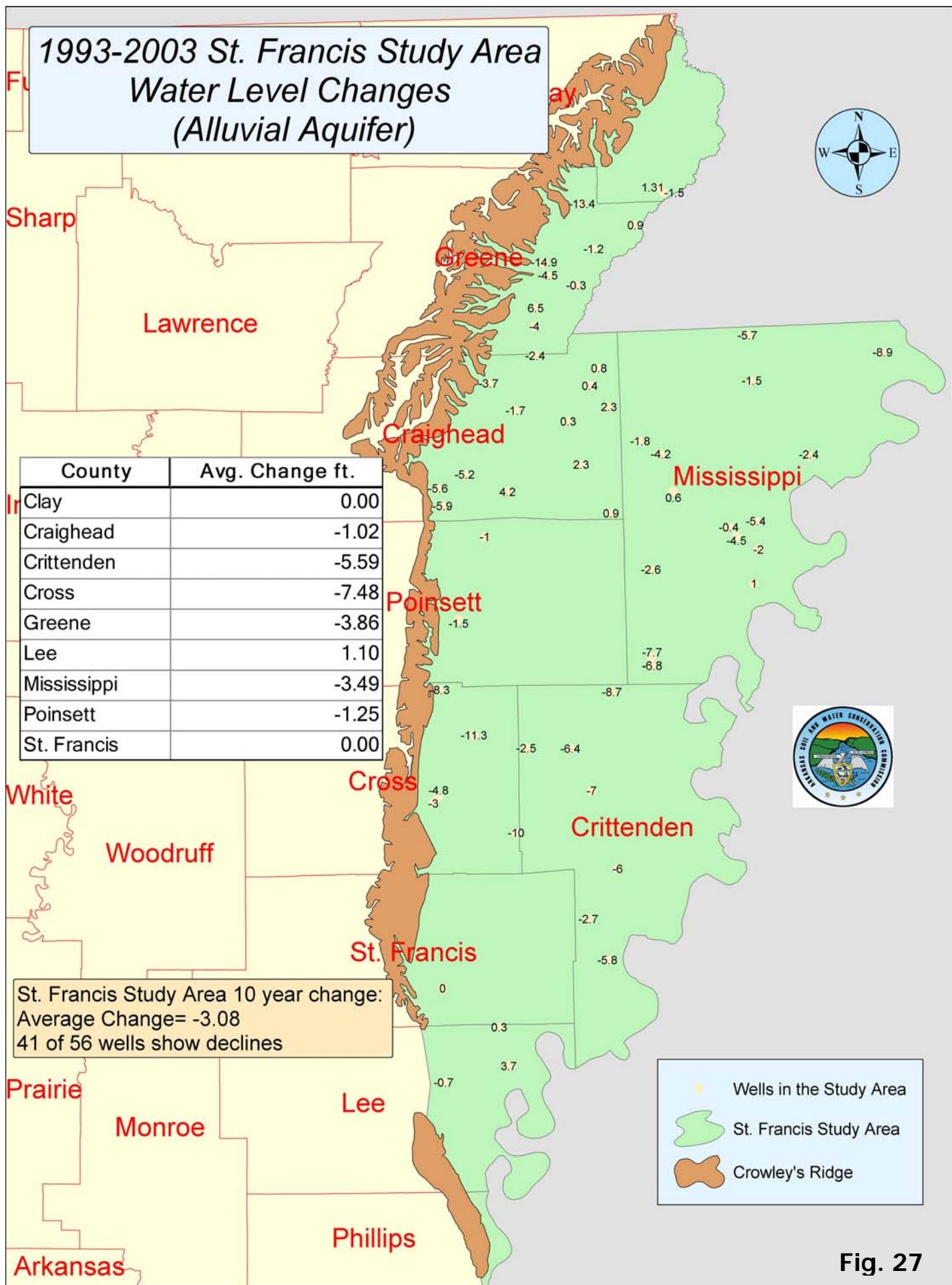
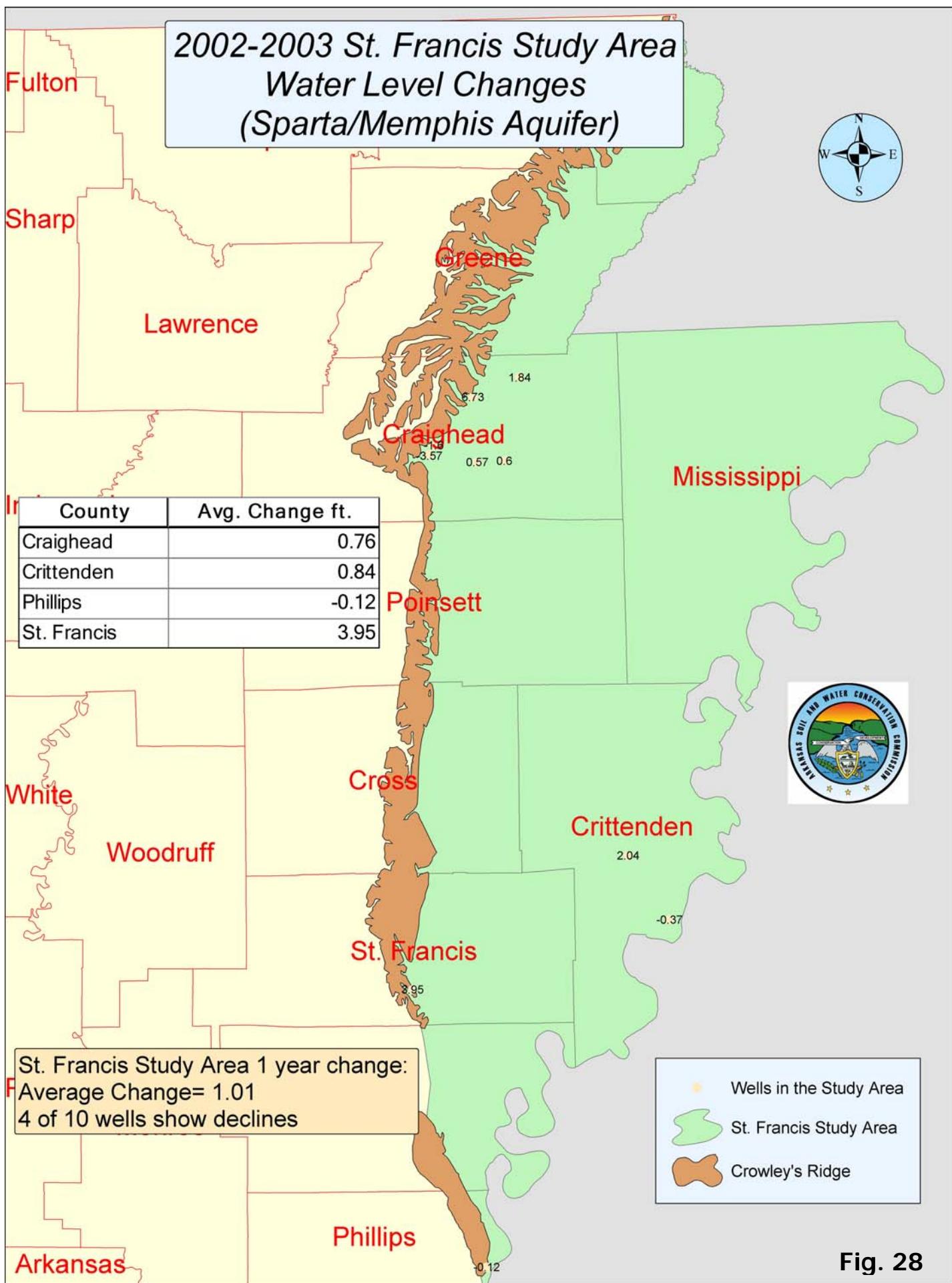


Fig. 27



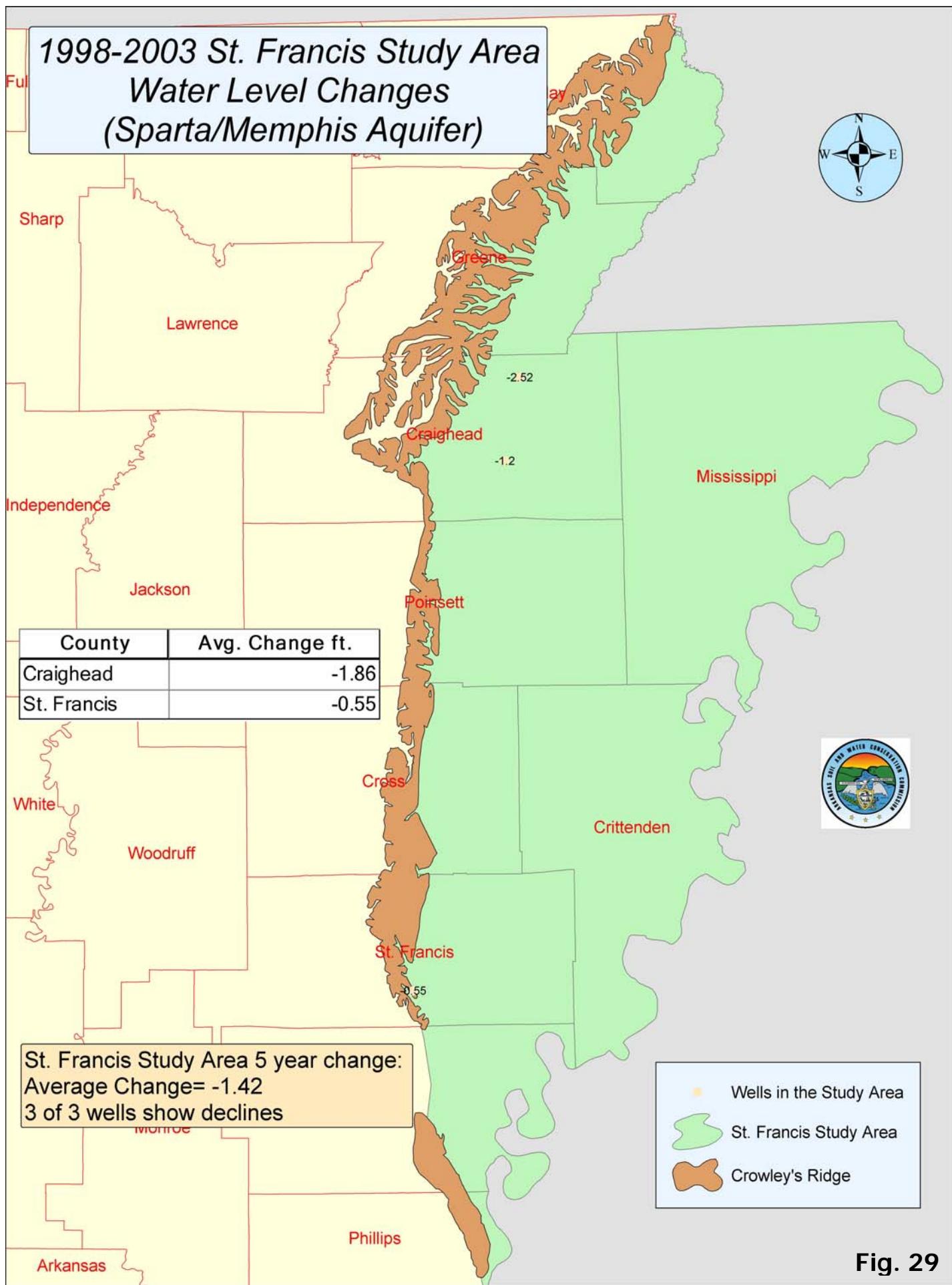


Fig. 29

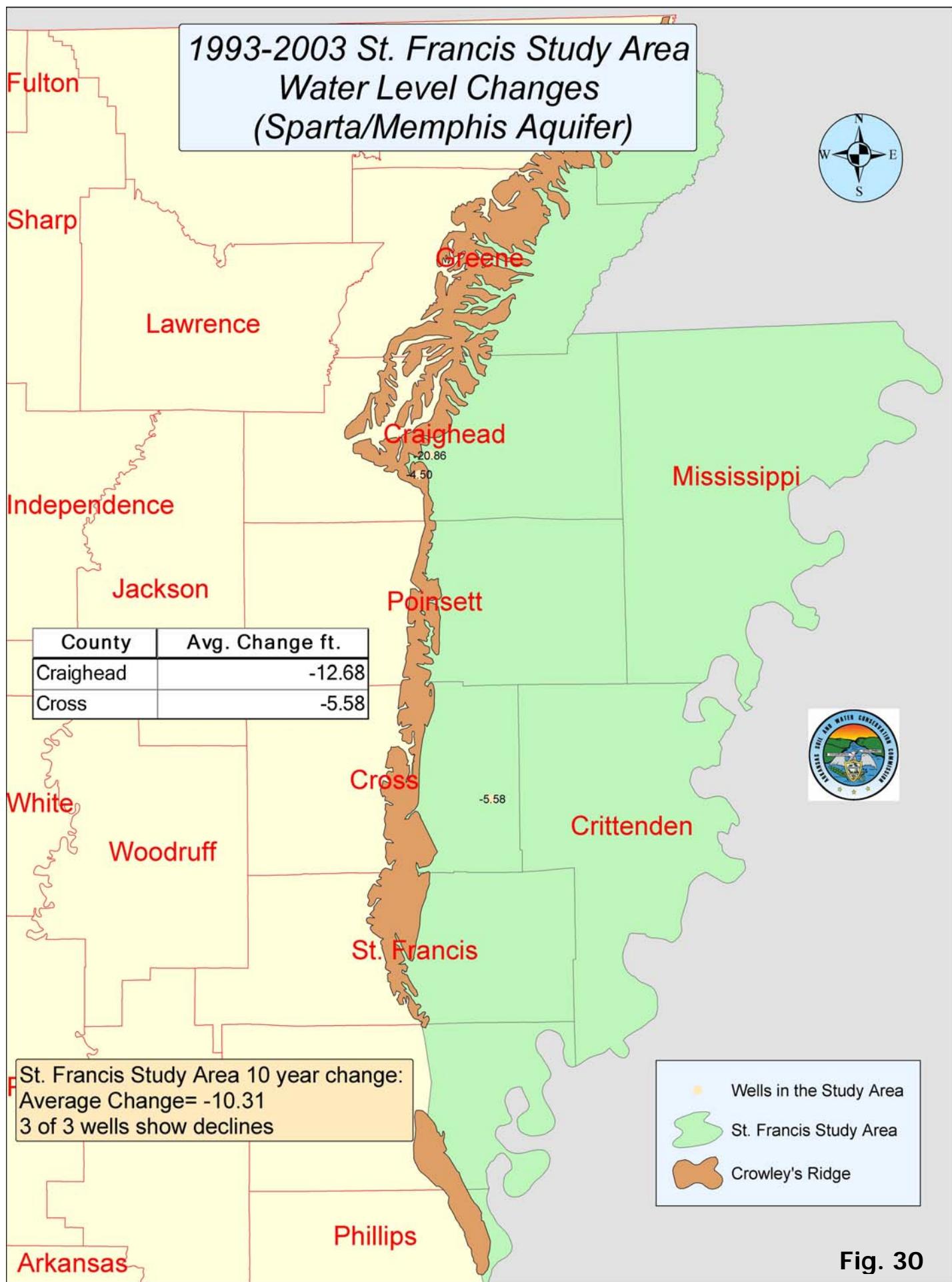


Fig. 30

Craighead County had an average change of +0.76 feet, and Crittenden County +0.84 feet. The well monitored in St. Francis County showed an average change of +3.95 feet, and the well in Phillips County -0.12 feet. (Fig.28)

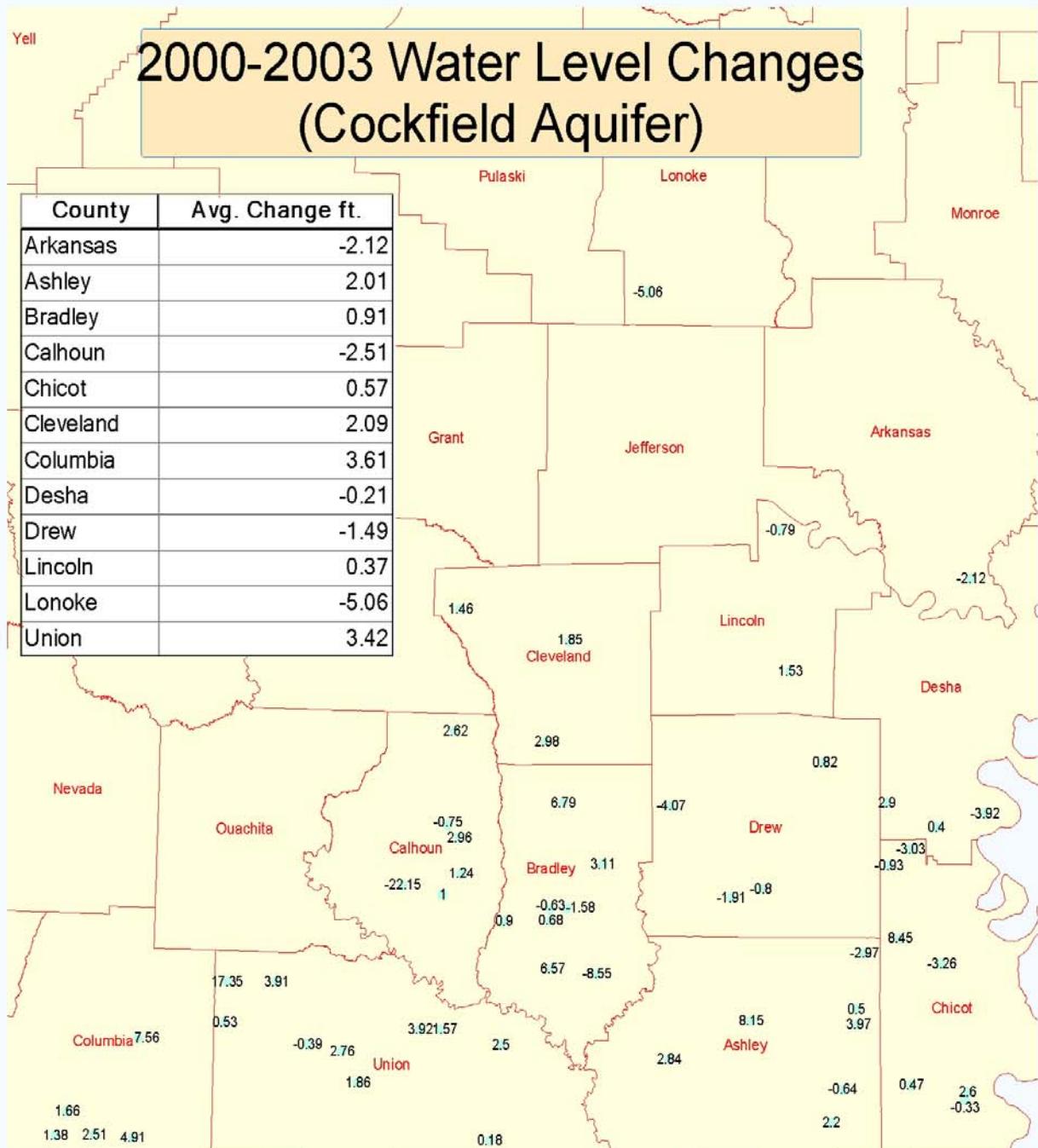
During the 5-year monitoring period, from 1998 to 2003, as well as the 10-year monitoring period from 1993 to 2003, only three wells were monitored in the Sparta/Memphis Aquifer in this study area. The changes in these wells, as well as their locations can be seen in figures 29 and 30. The ASWCC is adding new wells for data collection each year for the Sparta/Memphis Aquifer in this study area.

Figures 36 and 37 were produced, using the Kriging method of interpolation, to show the water-level declines over both the alluvial and Sparta/Memphis Aquifers respectively. This method is often used in soil science and geology where there is a spatial correlation between the data points and change. In isolated areas in Mississippi County and Chicot County where few Sparta/Memphis Aquifer data points exist, potentiometric surface maps were used to determine water-level change. The maps and data used were directly from USGS Water-Resources Investigations Reports.

Cockfield Aquifer

The Cockfield Aquifer ranges in thickness from 100 feet on the near the outcrop area to 600 feet in Chicot County, and generally yields from 30 gallons per minute near the outcrop area, to 500 gallons per minute in the thicker sediments in the southeast. Most of the wells in the Cockfield Aquifer are used for domestic and livestock water supply, however some areas with higher yields are used for industrial, municipal, and public supply. (Schrader and Joseph, 2000)

Data was collected on the static water-level changes in the Cockfield Aquifer in southeast Arkansas by the USGS in 2000 and again in 2003. There was an average water-level change of +0.98 feet during this time, with 19 of the 57 wells monitored showing declines. Lonoke County showed the greatest average decline with an average change of -5.06 feet, followed by Calhoun County -2.51 feet, Arkansas County -2.12 feet, Drew County -1.49 feet, and Desha County -0.21 feet respectively.



Average change 2000-2003 was
0.98 ft. 19 of 57 wells
monitored showed declines.

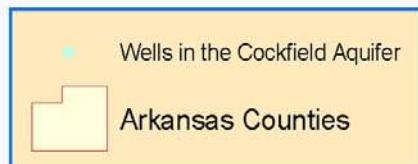


Fig. 31

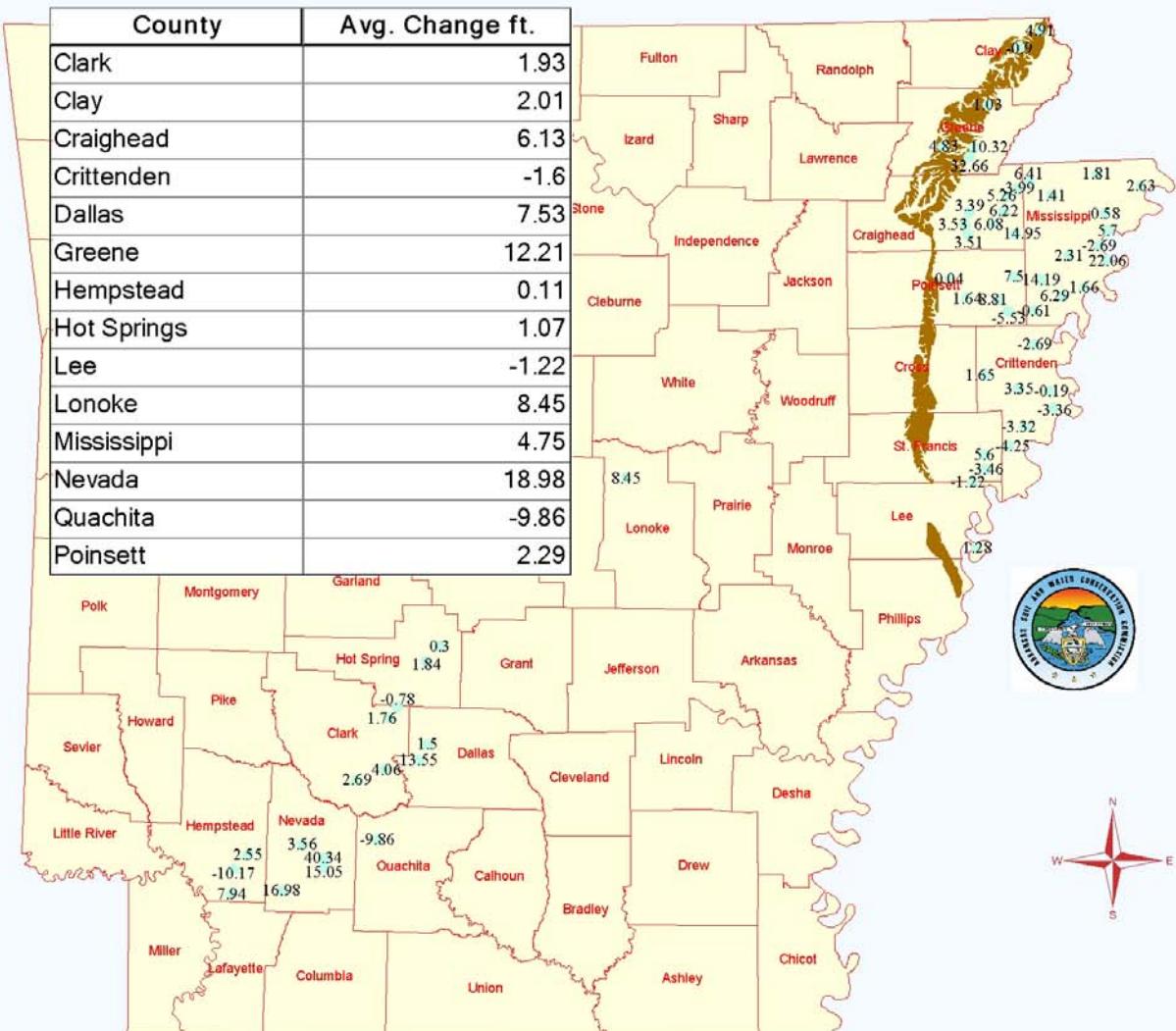
All other counties showed an average positive average water-level change during this time. Ashley County had an average change of +2.01 feet, Bradley +0.91 feet, Chicot +0.57 feet, Cleveland +2.09 feet, Columbia +3.61 feet, Lincoln +0.37 feet, and Union +3.42 feet respectively. (Fig.31)

Wilcox Aquifer

The Wilcox Aquifer is monitored primarily in six southwest Arkansas counties, as well as east of Crowley's Ridge as seen by the well locations in figure 32. Generally wells in the southern area only produce up to 100 gallons per minute, while the wells in the area east of Crowley's Ridge can produce up to 1,000 gallons per minute. In southern Arkansas the Wilcox aquifer is primarily used for domestic uses, while the area in the northeast is also used for commercial, industrial, and public supply purposes. (Schrader and Joseph, 2000)

Water levels were also monitored by the USGS in the Wilcox Aquifer in 2000 and in 2003. Most of the counties monitored for the Wilcox aquifer showed average water-level increases, with the exceptions being Ouachita County that had an average change of -9.86 feet, Crittenden County an average of -1.60 feet, and Lee County -1.22 feet. All the other counties monitored showed static water-level increases during this time. Greene County had the largest average increase of +12.21 feet, Hempstead County +0.11 feet, Nevada County +18.98 feet, Craighead County +6.13 feet, Dallas County +7.53 feet, Hot Spring County +1.07 feet, Lonoke County +8.45 feet, Mississippi County +4.75 feet, Poinsett County +2.29 feet, and St. Francis +1.07 feet respectively. Collectively the counties in the Wilcox Group study area had an average change of +4.32 feet during this time, with 15 of the 60 (25.0%) wells monitored showing declines. (Fig.32)

2002-2003 Water level Changes (Wilcox Aquifer)



Average Change 2002-2003 was
4.32 ft. 15 of 60 wells
monitored showed declines.

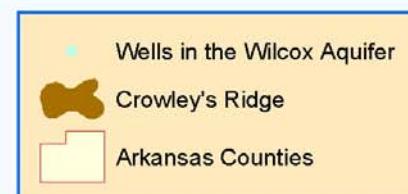


Fig. 32

Water Quality

Specific Conductance in the Alluvial and Sparta/Memphis Aquifers

Areas that have an elevated specific conductance generally are the same areas that have a higher concentration of dissolved chloride in the ground water. Generally, the occurrences of higher specific conductance in the alluvial aquifer most likely are caused by movement of water containing elevated concentrations of dissolved solids from sources at depth. (Bryant and others 1985). This "leaking" of water with higher concentrations of dissolved solids from an underlying aquifer is also thought to be a plausible explanation for the increase of specific conductance in the Sparta/Memphis Aquifer.

The specific conductance data that is collected by the USGS every year is used to quantify the amount of dissolved solids present in the ground water. Table 2 shows the specific conductance and equivalent dissolved chloride for the wells monitored by the USGS in both the alluvial and Sparta/Memphis aquifers in 2000 and 2001. Table 3 contains the most recent data for the alluvial aquifer for which only the specific conductivity and temperature were sampled in the summer of 2002.

The areas of higher specific conductance in the alluvial aquifer were located in western Chicot County, eastern Ashley County, central Desha County, and the majority of Arkansas County. In the data collected by the USGS in 2000, an area of increased concentration was noted west of Crowley's Ridge in Cross, Greene, Craighead, St. Francis, Lee, Monroe and Poinsett Counties. A map showing different concentrations can be found in the USGS Water-Resources Investigations Report 01-4124. (Schrader, T.P. 2001)

Areas of higher specific conductance in the Sparta/Memphis Aquifer were noted in southern Chicot County, throughout Ashley County. In east-central Arkansas counties with increased concentrations were St. Francis, Lee, Phillips, Monroe, Prairie, and Arkansas. Most of central Lee County has a specific conductance of over 1,200 microsiemens per centimeter, with some isolated areas with readings of greater than

1,400. Eastern Phillips County also had an area of 1,200 microsiemens per centimeter surrounding the town of Elaine AR. A table of wells sampled, as well as a map showing the areas of equal specific conductance can be found in USGS Water-Resources Investigations Report 00-4009. (Joseph, Robert L. 1999)

Nonpoint Source Program

The ASWCC's Nonpoint Source Program is supported by Section 319 (Clean Water Act) Grant Funds, which provide 60 percent of the total program funding. ASWCC staff continued work on one statewide nonpoint source ground water project in 2003. This 319 ground water project was initiated in 2000 and is ongoing until completed. The purpose of this project is to evaluate deficiencies the statewide ambient ground water monitoring program, and to upgrade the program by installing new wells or annexing existing wells into the monitoring network. Ambient ground water quality monitoring has traditionally been performed by ADEQ and the USGS. ASWCC evaluated the placement of wells used in these networks, and determining where new monitoring points are needed.

Ten monitoring well installations occurred in the Sparta and alluvial aquifers in the Grand Prairie in 2003. New well installations began in June 2002 and included two alluvial wells in Lonoke County. In 2003, eight alluvial wells and two Sparta wells were installed and sampled in the Grand Prairie, and eight existing wells annexed into the network in 2002 were re-sampled. The wells were sampled between June 4, 2002 and May 25, 2003 for selected primary and secondary drinking water parameters and pesticides. Drinking water parameters were analyzed by the Arkansas Water Resources Center laboratory. These results are presented in Appendix G. In addition, pesticide analyses were performed by ADEQ. No pesticides were detected in any of these wells.

In 2004, seventeen alluvial wells are planned in the Grand Prairie, and in the Cache, St. Francis, and Bayou Bartholomew River Basins. Two additional Sparta wells are also planned for installation in Prairie and Crittenden Counties. This project

represents the State's commitment to ground water quality monitoring as part of the Nonpoint Source Pollution Management Program. Appendix G shows 18 wells in the alluvial aquifer and 4 wells in the Sparta/Memphis aquifer were recently installed to monitor ground-water quality as well as changes in water-levels.

ARKANSAS WATER WELL CONSTRUCTION COMMISSION

WATER WELL CONSTRUCTION PROGRAM

The Arkansas Water Well Construction Commission (AWWCC) is designed to insure "that the general health, safety, and welfare be protected by providing a means for the proper development of the natural resource of underground water in an orderly, sanitary, reasonable, and safe manner, without waste, so that sufficient potable supplies for the continued economic growth of our state may be assured" (Arkansas Water Well Construction Act, 1969). The commission is composed of seven members. The members consist of: the director of the Department of Health or a designated representative, the director of the Arkansas Soil and Water Conservation Commission or a designated representative, one member involved in the heat pump industry, and four members involved the water well drilling industry.

The commission achieves its goal by monitoring the construction of water wells in the state. In addition to monitoring the drilling industry the commission also provides services to licensed drillers as well as to the public. Some of the services include providing information on water levels in wells, construction information about wells in an area, and proper well abandonment procedures. The commission also is equipped to assist drillers in the assessment of repair work, which may be needed in damaged wells.

During the 2003 legislative sessions two new Acts were passed into law. The first was Act 297 of 2003; this act allows the commission to develop an apprenticeship program for drillers and pump installers, as well as to seek criminal penalties and increases civil penalties from \$500 to \$2,500. It also requires contractors to obtain a

\$10,000 bond rather than the \$2,000 bond. This act became effective on July 1, 2003.

Second was Act 855 of 2003, this act allows the commission to confiscate any property which is used in the operation of drilling a water well without holding the proper registrations and permits. This act applies to individuals who continuously violate the law by not holding the proper registrations and permits. This act became effective on March 31, 2003.

Every meeting the commission is presented with a case summary. The following is a summary of activities and investigative findings for the 2003 fiscal year:

1. Thirty-seven (37) complaints were recorded in which it was determined that an investigation or arbitration was required, or in which it was determined that a violation had occurred as a result of noncompliance.
2. There were 4 cases, which required civil penalties to be assessed.
3. Two (2) administrative hearings were conducted regarding contractors.
4. Fifty-six (56) new applications to become a licensed pump installer or certified driller were received.
5. Two water well drilling rigs were confiscated in accordance with act 855 of 2003.

There are 185 water well contractors licensed (drill and/or pump) to work in Arkansas. The larger contractors usually employ several licensed drillers and/or pump installers and can have more than one rig permitted. The following is a break down of

the licensed contractors, drillers, pump installers, and permitted rigs. There was a decline of 47 water well contractors compared to the 2002 fiscal year.

1. 148 contractors are licensed for drilling and pump installation.
2. 37 contractors are licensed for pump installation only.
3. 283 registered drillers
4. 271 registered pump installers
5. 389 permitted drill or pump installation rigs.

GROUND WATER USE

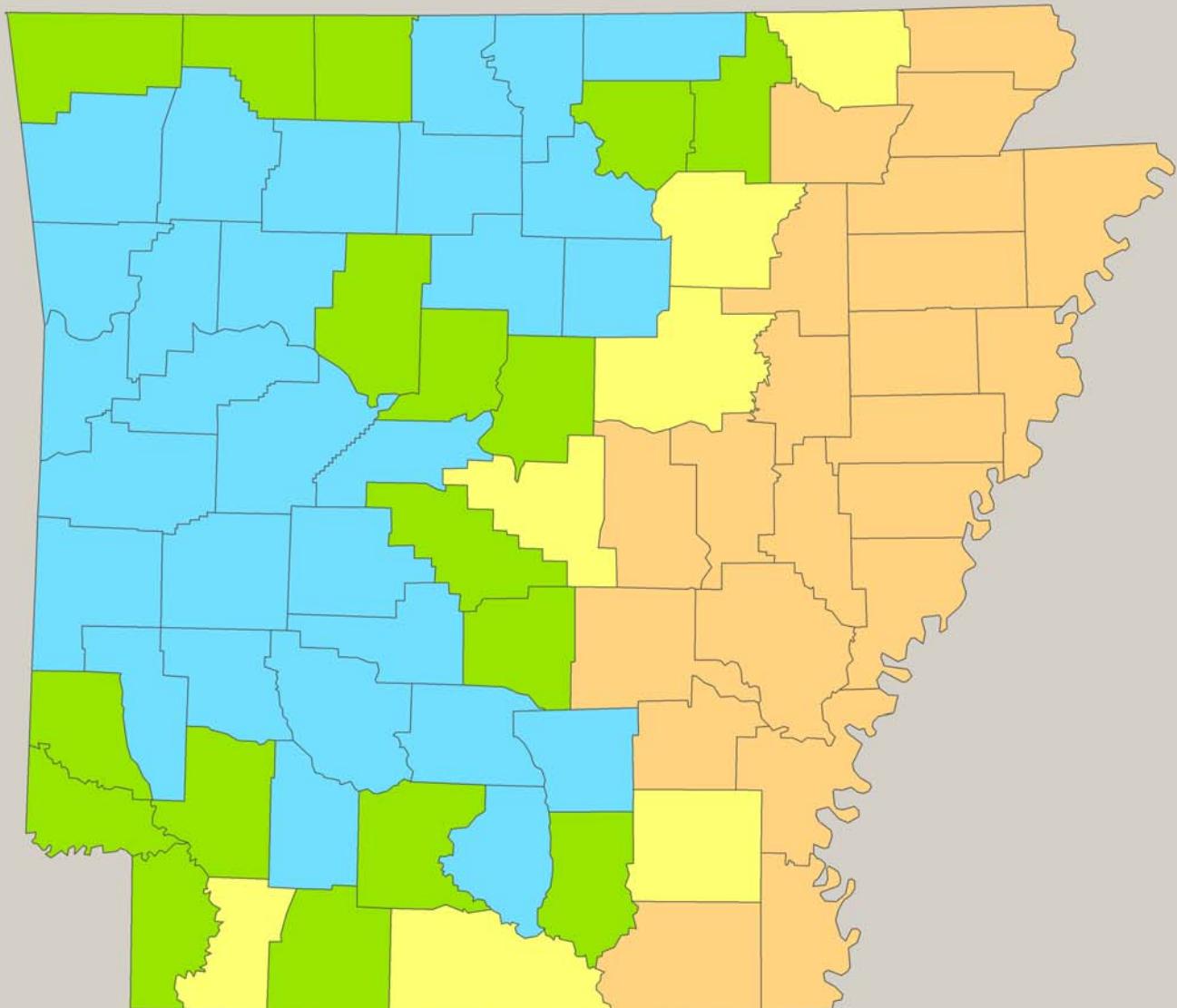
REGISTERED WELLS

In accordance with Act 1051 of 1985, all wells in Arkansas that have the capacity to produce fifty thousand (50,000) gallons per day must be registered with the ASWCC. Domestic wells are exempt. The quantity used must be reported by March 1st of the following year. In 2002, there were approximately 51,000 registered wells reported in the State. Of this total, 49,600 (97.25%) are agricultural wells most of which are irrigation wells located primarily in eastern Arkansas. The remaining 1,400 reported wells are used predominately for municipal or industrial purposes.

2001 REPORTED WATER USE

In 2001, 7,397 million gallons per day (mgd) of water were reported to be withdrawn from the State's aquifers (Holland, 2001). This was 73% of the total reported consumptive use in Arkansas. The greatest reported volume is pumped from the alluvial aquifer and used primarily for irrigation. Poinsett County and Arkansas County used the most alluvial water of all counties, with 674.82 mgd and 602.54 mgd respectively. The Sparta/Memphis Aquifer is the second largest aquifer in terms of withdrawals. It yields about 280 mgd per year as reported for municipal and industrial purposes. Jefferson County was the largest user of Sparta/Memphis water of all the counties (90.63 mgd). Table 1 lists reported water use by aquifer per county in Arkansas in 2001 as supplied to the ASWCC by the USGS. Total reported water use by category per county in Arkansas can be found in Water Use in Arkansas, 2000, U.S.G.S. Open-File Report that is currently in the review process, and will be available soon. Figure 34 shows water use in million gallons per day (mgd) for the entire state from 1965 to 2000, and figure 33 shows 2000 water use by county.

Ground Water Use in Arkansas as of 2000

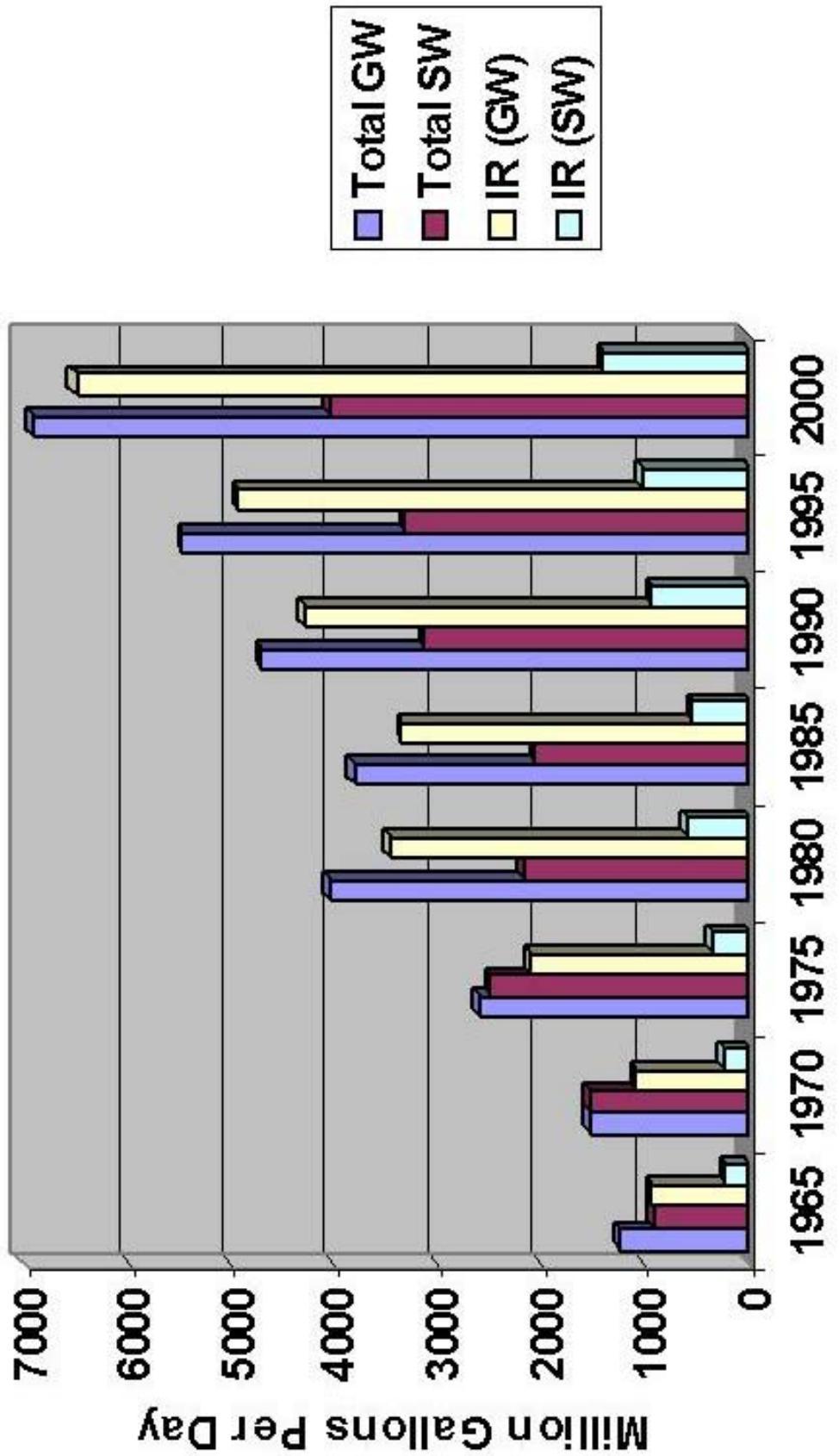


2000 Ground-Water Use, Mgal/day

0-1
2-10
11-100
101-1,000

(From Holland, USGS Ground-water information sheet, 2003)

Fig. 33



Total Ground-Water (GW) and Surface-Water (SW) and Irrigation (IR) in Arkansas, 1965-2000

(From Holland, USGS Ground Water Use Information Sheet, 2003)

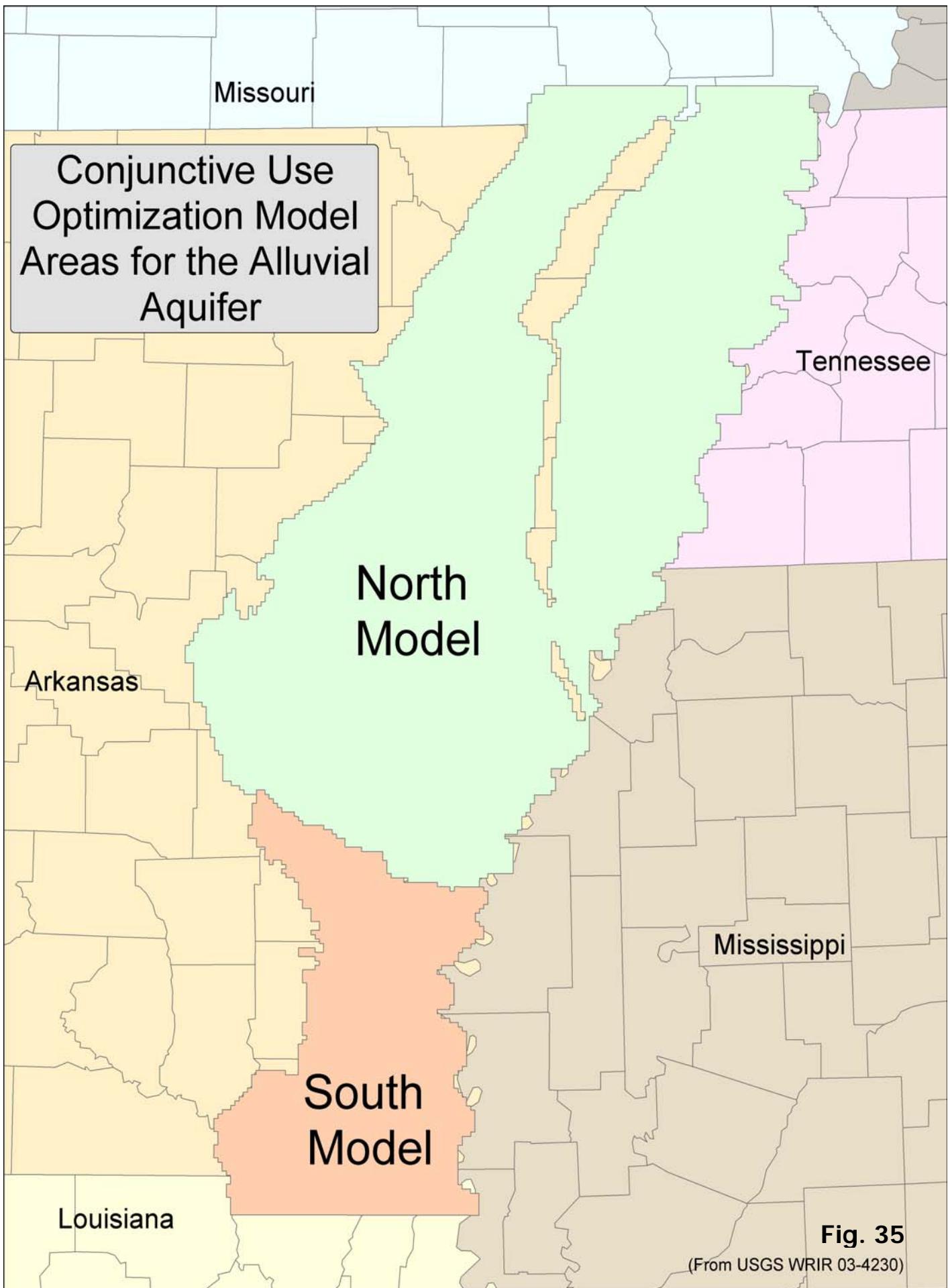
Fig. 34

Ground-Water Modeling

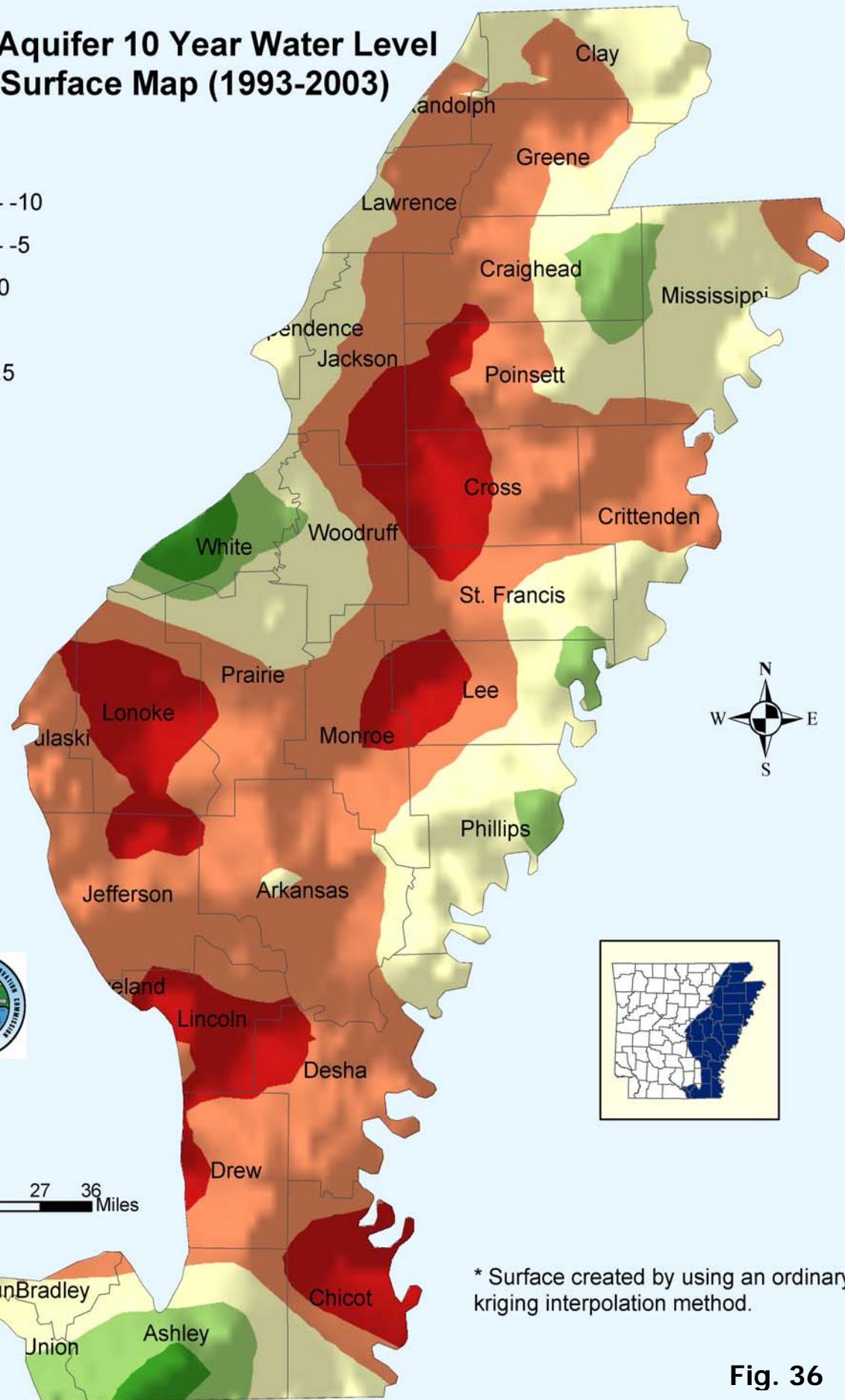
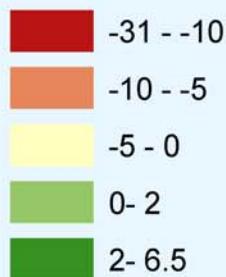
The USGS recently completed recalibration of a ground-water flow model for the alluvial aquifer in eastern Arkansas. The scale of the model is immense, and the methodology and complete results can be found in the USGS Water-Resources Investigations Report 03-4109. There also is a conjunctive-use optimization model for the alluvial aquifer, this is USGS Water-Resources Investigations Report 03-4230. The purpose of this model was to determine maximum withdrawal rates from each one square mile cell in the model based on 1997 ground-water use, while not violating specified constraints imposed on the model. (Czarnecki, and others, 2003) The constraints were based on predetermined stream flow levels, as well as aquifer saturated thickness percentages that must be maintained. A minimum of 50% has been set for the alluvial aquifer as the sustainable yield thickness in Arkansas.

The ground-water models showed that a sustainable yield for the alluvial aquifer could not be met using the 1997 pumping rate. The model is split into a North Optimization Model, and a South Optimization Model. (Fig. 35) The sustainable yield from ground water in the North Model was 360.3 million cubic feet per day, and the demand was 635.7 million cubic feet per day, based on 1997 pumping rates. This leaves an unmet demand of 275.5 million cubic feet per day (43%). In the South Optimization Model the sustainable yield from ground water, based in 1997 pumping rates, was 70.3 million gallons per day with a demand of 73.6 million gallons per day. This leaves an unmet demand of 3.3 million gallons per day, or 5% for the south model. (Czarnecki and others, 2003) The unmet demand represents the amount by which water use must be reduced to achieve a sustainable yield.

It should be noted that the aforementioned sustainable yield and demand figures were based on 1997 ground-water rates. The amount of water use, as well as the unmet demand has both increased since this time due to the number of new irrigation wells drilled each year. There have been approximately 9,000 new wells drilled in the alluvial aquifer since 1997.



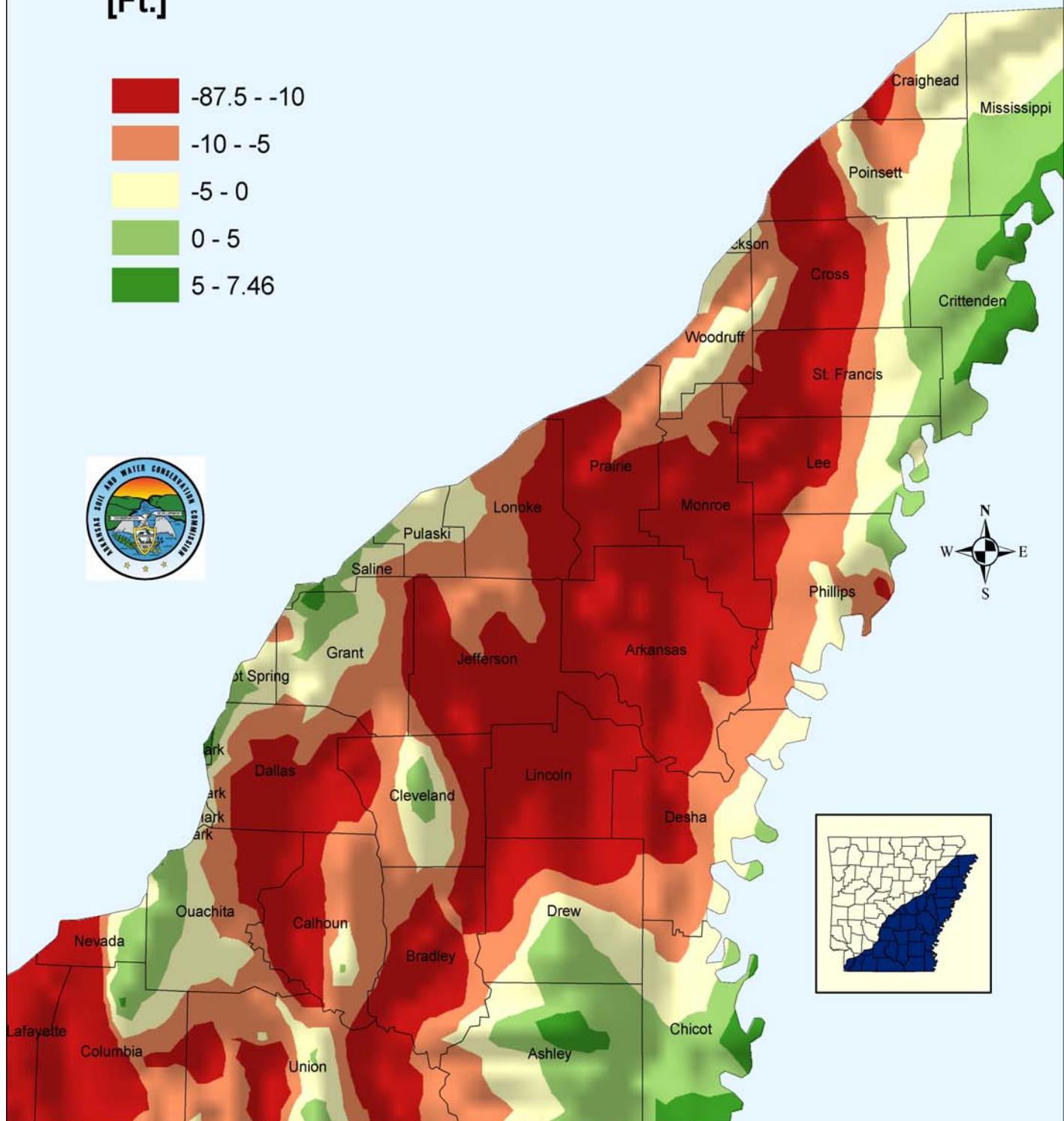
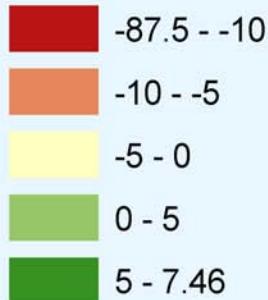
Alluvial Aquifer 10 Year Water Level Change Surface Map (1993-2003) [Ft.]



* Surface created by using an ordinary kriging interpolation method.

Fig. 36

Sparta Aquifer 10 Year Water Level Change Surface Map (1993-2003) [Ft.]



* Surface created by using an ordinary kriging interpolation method.

Fig. 37

SUMMARY

The Ground Water Protection and Management Report for 2003 are a summary of the activities and significant findings of the Arkansas Soil and Water Conservation Commission (ASWCC). This report is prepared annually in response to legislative mandates that direct the ASWCC to study the State's ground-water resources. The report also describes ground-water protection activities administered through Region VI of the U.S. Environmental Protection Agency, which are funded through Sections 106 and 319 of the Clean Water Act.

The purposes of the programs outlined in this report are to monitor the condition of the State's ground-water resources and to evaluate trends in water level and water quality fluctuations. The ASWCC, the NRCS, and the USGS monitor over 1,700 water wells each year for water levels and prescribed water quality parameters. This monitoring is accomplished through a cooperative agreement with the ASWCC, the U.S. Geological Survey, and the Arkansas Geological Commission.

Significant ground-water depletion continues throughout study areas in Arkansas. Elevated levels of dissolved solids are being recorded in areas of significant water level decline in the Cache and Grand Prairie Study Areas. The areas of heightened concern due to water-level decline continue to be in the Grand Prairie, South Arkansas, and Cache Study Areas. Fluctuations may be observed in ground-water levels over a short time period, however long term records illustrate the seriousness of the declines in ground-water levels.

As shown by the recently completed model by the USGS, ground-water use in the alluvial aquifer in eastern Arkansas was 4,760 mgd in 1997, well above the sustainable yield of 2,700 mgd. A check of the 1985 water use data for the alluvial aquifer shows that in that year there was already greater than 3,400 mgd being pumped from the aquifer. The percentage above optimized sustainable yield ranged from 5.3% in Pulaski County, to 97.9% in Lee County, with no single county below sustainable yield in 1997. Currently in the Boeuf-Tenses Study Area we are developing ground water at the approximate sustainable yield for that area.

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Table 1
Ground-Water Use
2001

Appendix A

Alluvial Aquifer Water Level Monitoring Data

Alluvial Aquifer
 Water level Data
 '93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03
Arkansas	08S02W08ACA1	340041.03	911505.57	179		2/12/2003					179			
Arkansas	08S03WT2299	340147.45	912202.5	178	158	2/12/2003	21.60		158.19	152.53	156.4		-1.79	3.87
Arkansas	10S04W04BAA1	341750	912654	186		2/13/2003	93.30	95.00	92.00		92.7	-2.30	0.70	
Ashley	15S04W26DCC1	332231.97	912902.22	127	64.1	3/20/2003	30.20			96.32	96.8			0.48
Ashley	15S07W21CBA1	332315.7	915001.37	210	27.4	2/10/2003	6.50			205.81	203.5			-2.31
Ashley	16S04W10ABB	331902	913002	130		3/20/2003	33.20				96.8			
Ashley	16S04W10ABB	331902	913002	130							130			
Ashley	16S06W08CAA1	331941.34	914438.26	185	105	2/11/2003				109.47				
Ashley	16S06W27BAB1	331729	914240	182	115	2/11/2003	83.55			100.34	98.45			-1.89
Ashley	16S06W35BAD	331624	914143	175		3/20/2003	71.10				103.9			
Ashley	16S06W35BAD	331624	914143	175							175			
Ashley	17S04W03ABB1	331528	913010	124	105	2/10/2003	30.10			96.98	93.9			-3.08
Ashley	17S04W03ABB1	331528	913010	124	105						124			
Ashley	17S04W15DDC1	331252.48	912954.09	116	57	2/10/2003	23.30			91.78	92.7			0.92
Ashley	17S04W21ABA1	331252	913108	117		2/10/2003	22.90			97.79	94.1			-3.69
Ashley	17S06W01ADD1	331517.9	913956.26	182	144	2/11/2003	82.80		102.30	100.75	99.2		-3.10	-1.55
Ashley	17S06W35CAC1	331049	914136	179	140	2/11/2003	71.80			101.97	107.2			5.23
Ashley	18S04W08CAD1	330852	913218	120		3/20/2003	29.95				90.05			
Ashley	18S04W08CAD1	330852	913218	120							120			
Ashley	18S04W23DDD1	330658	912856	103	100	4/3/2003	16.00	89.40		82.00	87	-2.40		5.00
Ashley	18S05W11CCD1	330841	913538	118	75	4/3/2003	15.00	99.70	94.00	98.00	103	3.30	9.00	5.00
Ashley	18S05W22DDA1	330712	913555	125	100	4/3/2003	12.00	110.30	100.50	109.00	113	2.70	12.50	4.00
Ashley	18S05W24BDC1	330730	913435	118		3/20/2003	22.60				95.4			
Ashley	18S05W24BDC1	330730	913435	118							118			
Ashley	18S08W01AAB1	331014.97	915225.12	181	128						181			
Ashley	19S04W06BAB2	330503.96	913328.56	110	98						110			
Ashley	19S04W09CBB	330346	913146	105		3/20/2003	22.90				82.1			
Ashley	19S04W09CBB	330346	913146	105							105			
Ashley	19S04W14BBB1	330310	912913	107	100		21.00	92.70	84.00	82.00	86	-6.70	2.00	4.00
Ashley	19S05W08ACA1	330405	913815	111			11.00	100.30	92.00	98.00	100	-0.30	8.00	2.00
Ashley	19S05W16ABB1	330323	913718	116	100		15.00	96.40	95.50	97.00	101	4.60	5.50	4.00
Ashley	19S05W22DCD1	330139	913615	107			14.00	92.30	93.00		93	0.70	0.00	
Chicot	13S03W27AAA1	333253	912310	138							138			
Chicot	13S03W34BAA1	333110.24	912539.38	133	100	2/10/2003	39.00			45.18	94			
Chicot	13S03W34BAA1	333110.24	912539.38	133	100						133			
Chicot	13S03W34DBB1	333135.52	912335.8	132	75						132			
Chicot	13S03W35BAC1	333154.05	912245.53	134	90						134			
Chicot	14S02W09BDD1	332859	911729	133			29.00		105.00	105.00	104		-1.00	-1.00
Chicot	14S03W07BBD1	333011.09	912620	134	77						134			
Chicot	14S03W32CDB2	332613.47	912551.45	134	90						134			
Chicot	15S02W20DDC1	332226.59	911919.83	110	70		29.00	108.00	100.20	97.98	81	-27.00	-19.20	-16.98
Chicot	15S03W18BBB1	332226.59	911919.83	125			36.00				89			

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03
Chicot	15S04W13DAD1	332338	912730	131							131			
Chicot	16S03W11ADC1	331919.54	912233.88	118							118			
Chicot	17S01E17CDA1	331258.52	910716.26	118	110						118			
Chicot	17S01E18ADA1	331325.68	910758.2	121							121			
Chicot	17S01W06BCC1	331501.18	911505.22	115	100						115			
Chicot	17S02W10AAA1	331429	911712	114	90	2/10/03	27.40			87.20	86.6			-0.60
Chicot	17S02W10AAA1	331429	911712	114	90						114			
Chicot	17S02W33DDA	331021	911820	120		3/20/2003	32.05			86.80	87.95			1.15
Chicot	17S02W33DDA	331021	911820	120							120			
Chicot	17S03W18CBC1	331257	912736	117			32.00		91.00	84.00	85		-6.00	1.00
Chicot	17S03W28DBA1	331126.59	912441.42	110	95						110			
Chicot	18S01W19DAB1	330708.54	911423.15	110							110			
Chicot	18S03W22ABA2	330728	912341	103	85.5						103			
Chicot	19S01W17BBB	330309	911415	105		3/20/2003	15.90				89.1			
Chicot	19S01W17BBB	330309	911415	105							105			
Chicot	19S01W17BCC1	330250.36	911406.24	106	120						106			
Chicot	19S03W14ABB1	330304.47	912250.69	111	95						111			
Clay	18N08E03DAB1	361323.23	901153.03	257	105	327/03	4.68	251.01		252.32	252.32	1.31		0.00
Clay	18N08E11BAA1	361253	901117	259	100	4/1/2003	6.50	254.00		251.30	252.5	-1.50		1.20
Clay	19N03E24AAA1	361654.99	904157.11	278		3/2/2003	19.85			258.78	258.15			-0.63
Clay	19N04E11DAA1	361805	903621	280		4/1/2003	22.10			261.30	257.40	257.9		-3.40
Clay	19N04E19AAA1	361654.4	904049.99	282		3/2/2003	28.70				252.15	253.3		
Clay	19N04E19AAA1	361654.4	904049.99	282							282			
Clay	19N04E19BAA1	361649	904125	279	100	4/1/2003	21.00				257.10	258		
Clay	19N05E15BBD1	361716	903152	289	110	4/1/2003	32.60			263.50	257.30	256.4		-7.10
Clay	19N06E18DBC1	361642	902815	297		4/1/2003	34.60			264.90	263.00	262.4		-2.50
Clay	19N07E25BCB1	361519	901700	268		4/1/2003	15.40			251.80	253.60	252.6		0.80
Clay	19N08E02ABB1	361858.57	901103.74	269							269			
Clay	19N08E08DCA1	361729	901402	270		4/1/2003	3.90			263.40		266.1		2.70
Clay	19N08E27DAA1	361459	901140	261							261			
Clay	19N08E27DAA1	361459	901140	261							261			
Clay	19N09E19CDC1	361539	900908	265							265			
Clay	20N03E25BAA1	362112	904225	288	100	4/1/2003	21.90				264.70	266.1		
Clay	20N04E02BBC1	362427	903722	285							285			
Clay	20N04E02BBC1	362427	903722	285		3/2/2003	15.10					269.9		
Clay	20N04E03ADA1	362425	903725	290		4/1/2003	17.00			274.50	271.70	273		-1.50
Clay	20N04E06BB1	362444.34	904131.25	290	110	3/2/2003	18.70				270.25	271.3		
Clay	20N05E22CAD1	362118	903132	290		4/1/2003	26.40			267.10	263.30	263.6		-3.50
Clay	20N05E30CAC1	362003	903454	283		4/1/2003	16.30				266.90	266.7		
Clay	20N05E34DBA1	361939.31	903117.17	285	110	3/2/2003	27.25			265.51	257.25	257.75		-7.76
Clay	20N06E09BBA1	362327	902620	290		4/1/2003	19.70			274.80	270.20	270.3		-4.50
Clay	20N06E12BBB1	362325	902321	296							296			
Clay	20N06E12BBB1	362325	902321	296		3/2/2003	22.40				273.6			
Clay	20N06E28CCD1	362005	902630	290		4/1/2003	26.10			268.90	263.50	263.9		-5.00
Clay	20N08E22BDC1	362111	901220	275		4/1/2003	7.80			266.50	268.50	267.2		0.70
Clay	20N09E09ABC1	362306	900642	279		4/1/2003	7.10			272.90	275.00	271.9		-1.00

Wells/Declines: 1 of 1 3 of 3 3 of 5
Average Change: -8.73 -3.29

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03	
Craighead	14N05E25ABB1	354920.85	903025.35	238			18.40			218.47	219.6				
Craighead	14N05E25ABB1	354920.85	903025.35	238		3/3/2003								1.13	
Craighead	14N06E06BAA1	355234	902934	240	120	3/12/2003	21.10	220.60	222.00	217.50	218.9	-1.70	-3.10	1.40	
Craighead	14N06E20CCD1	354922.16	902849.94	226	150	3/5/2003	4.95		221.03	220.12	221.05		0.02	0.93	
Craighead	14N06E27AAB1	354911.46	902559.08	225.93	30.3						225.93				
Craighead	14N07E07BCB1	355124	902323	230	98	3/12/2003	4.00	225.70	225.70	225.00	226	0.30	0.30	1.00	
Craighead	14N07E14DDC1	354956	901831	230	120	3/12/2003	4.90		222.50	224.50	225.1		2.60	0.60	
Craighead	14N07E26DBB1	354833.59	901843.36	228	100	3/5/2003	2.50			224.90	225.5			0.60	
Craighead	14N07W26DCA1	354820.21	901835.64	230		3/5/2003	4.55			215.98	225.45			9.47	
Craighead	15N02E01BCA1	355748	904955	254	100	3/13/2003	38.00	231.60	227.80	222.70	216	-15.60	-11.80	-6.70	
Craighead	15N02E12DCB1	355626	904930	250	120	3/13/2003	31.70	228.60	220.90	219.80	218.3	-10.30	-2.60	-1.50	
Craighead	15N03E19ADA1	355502.21	904802.05	262	116						262				
Craighead	15N03E19ADA1	355502.21	904802.05	262	116	3/5/2003	46.30			218.57	215.7			-2.87	
Craighead	15N05E22BAB1	355513	903241	260	197	3/12/2003	35.00	228.70	230.00	224.20	225	-3.70	-5.00	0.80	
Craighead	15N06E04BAD1	355744	902706	239	104	3/12/2003	11.10	230.30	228.00	224.40	227.9	-2.40	-0.10	3.50	
Craighead	15N06E20DDD1	355426	902739	234		3/5/2003	8.35		228.02	224.72	225.65		-2.37	0.93	
Craighead	15N07E10DAB1	355622	901934	235	106	3/12/2003	7.00	227.20	227.70	229.00	228	0.80	0.30	-1.00	
Craighead	15N07E10DBA1	355627.56	901943.75	236	120	3/5/2003	5.37			230.00	230.63			0.63	
Craighead	15N07E21DAB1	355444	902043	236	110	3/12/2003	7.00	228.60	227.70	228.50	229	0.40	1.30	0.50	
Craighead	15N07E35DCB1	355241	901831	231	120	3/12/2003	7.50	221.20	221.10	223.00	223.5	2.30	2.40	0.50	
												Wells/Declines:	20 of 27	24 of 32	17 of 44
												Average Change:	-5.13	-3.19	0.01
Crittenden	04N07E21AAD1	345643.83	902121.49	202	82.1	3/4/2003	8.65			191.94	193.35			1.41	
Crittenden	05N07E08BDC1	350407	902234	204	110	4/15/2003	20.50	186.20	187.50	182.30	183.5	-2.70	-4.00	1.20	
Crittenden	05N07E28CBA1	350121.32	902139.85	201		3/4/2003	18.70		186.93	182.68	182.3		-4.63	-0.38	
Crittenden	05N07E34BAB1	350059.39	902029.86	203	100	3/31/2003	12.50				190.5				
Crittenden	05N07E34BAB1	350059.39	902029.86	203	100	3/4/2003	14.90			187.91	188.1			0.19	
Crittenden	05N07E34CDD1	350010	902028	205	110	4/15/2003	12.50	198.30	184.30	195.40	192.5	-5.80	8.20	-2.90	
Crittenden	05N08E11CCD2	350344.75	901308.22	211	63						211				
Crittenden	06N07E13BAA1	350849.58	901807.57	205	130	3/4/2003	19.85		187.55	184.85	185.15		-2.40	0.30	
Crittenden	06N07E14ABA1	350848	901858	211	110	4/15/2003	20.50	196.50	194.90	190.20	190.5	-6.00	-4.40	0.30	
Crittenden	07N06E29CBC1	351152	902914	210	120	3/31/2003	37.50			171.40	172.5			1.10	
Crittenden	07N07E05DAD1	351504	902129	215		3/5/2003	29.35		193.00		185.65		-7.35		
Crittenden	07N07E31CCC1	351041.9	902358.97	207	110	3/5/2003	33.40			174.54	173.6			-0.94	
Crittenden	07N07E34DDA1	351116	901941	215							215				
Crittenden	07N07E34DDA1	351116	901941	215		3/5/2003	28.45				186.55				
Crittenden	07N08E04BBD1	351538	901505	224	120	3/31/2003	19.00			204.50	205			0.50	
Crittenden	07N09E05CDD1	351453.34	900933.58	214	120	3/5/2003	5.50		205.47	199.53	208.5		3.03	8.97	
Crittenden	08N06E01DCC1	352021	902408	215	120	3/31/2003	33.00	188.40	186.00	182.00	182	-6.40	-4.00	0.00	
Crittenden	08N06E06DDB1	352030	902920	214	120	3/31/2003	30.20	186.30	184.40	181.70	183.8	-2.50	-0.60	2.10	
Crittenden	08N06E26ABC1	352255	902520	210		3/4/2003	33.10				176.9				
Crittenden	08N06E26ABC1	352255	902520	210		3/4/2003	33.10				176.9				
Crittenden	08N06E26BBA1	351737	902552	215							215				
Crittenden	08N06E26BBA1	351737	902552	215		3/4/2003	33.10				181.9				
Crittenden	08N07E13CCC2	351828.34	901811.95	221	100	3/12/2003	29.20			191.53	191.8			0.27	
Crittenden	08N07E32DAA1	351618	902146	215	110	4/15/2003	28.50	193.50	188.30	193.10	186.5	-7.00	-1.80	-6.60	
Crittenden	08N08E06ABB1	352103	901644	223	110	3/31/2003	29.00			194.20	194			-0.20	
Crittenden	09N07E02CDB1	352537	901905	225	130	3/31/2003	29.00	204.70	197.20	190.40	196	-8.70	-1.20	5.60	

Alluvial Aquifer Water level Data '93-'98-'02-'03

Alluvial Aquifer
 Water level Data
 '93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03	
Dasha	07S01E19ABA1	340428	910303	154	120	4/4/2003	14.20	141.00	139.00	141.00	139.8	-1.20	0.80	-1.20	
Dasha	08S03W33ABD1	335802.92	912338.18	165.04	60						165.04				
Dasha	08S03W33ABD1	335802.92	912338.18	165.04	60	2/11/2003	7.30		159.35	158.90	157.74		-1.61	-1.16	
Dasha	09S01W08BDA1	335608	911234	156		4/11/2003	26.00	139.00	135.00	133.00	130	-9.00	-5.00	-3.00	
Dasha	09S01W15CBB1	335501	911055	152		4/11/2003	35.00			115.00	117			2.00	
Dasha	09S02W20DAB1	335419	911835	152		4/11/2003	32.00	129.00	127.00	119.00	120	-9.00	-7.00	1.00	
Dasha	09S02W26DDC1	335256.57	911529.64	149.27	94						149.27				
Dasha	09S02W26DDC1	335256.57	911529.64	149.27	94	2/11/2003	30.20	129.32	129.04	118.92	119.07	-10.25	-9.97	0.15	
Dasha	09S03W05BAC1	335704	912506	161							161				
Dasha	09S03W13BAB1	335500	911922	156							156				
Dasha	09S03W17DCB1	335448.23	912456.66	155.08	126						155.08				
Dasha	09S03W17DCB1	335448.23	912456.66	155.08	126	2/11/2003	33.80		127.76	121.34	121.28		-6.48	-0.06	
Dasha	09S04W06BCA1	335756.06	913242.95	161		2/12/2003	33.60			128.22	127.4			-0.82	
Dasha	10S01W23CDA1	335305	911032	151							151				
Dasha	10S02W11ADD1	335045	911517	146		4/11/2003	27.00	130.00	127.00	119.00	119	-11.00	-8.00	0.00	
Dasha	10S02W24DBC1	334849.63	911453.44	143	70	2/11/2003	26.80		123.18	117.38	116.2		-6.98	-1.18	
Dasha	10S03W26CAA1	334806	912144.55	155	96	3/24/2003	44.03			112.06	110.97			-1.09	
Dasha	10S03W26CCC	334759	912235	150							150				
Dasha	10S03W26CCC	334759	912235	150		3/24/2003	40.80			105.20	109.2			4.00	
Dasha	10S04W09BCD1	335059	913052	164		4/23/2003	31.80				132.2				
Dasha	10S04W12BBB1	335048	912754	155		4/23/2003	33.80				121.2				
Dasha	10S04W19DAC1	334901	913233	160		4/23/2003	27.80				132.2				
Dasha	10S04W21AAA1	334929	913012	160		4/23/2003	28.10				131.9				
Dasha	11S02W10ADD	334613	911635	145							145				
Dasha	11S02W10ADD	334613	911635	145		3/24/2003	32.75			110.20	112.25			2.05	
Dasha	11S02W15ADD1	334446	911635	144		4/11/2003	33.00	118.00	117.00	112.00	111	-7.00	-6.00	-1.00	
Dasha	11S03W16CBA1	334439	912433	155							155				
Dasha	11S03W31BAA1	334228.22	912651.1	148							148				
Dasha	12S01W33BAA1	333718.14	911205.07	135	95						135				
Dasha	13S02W05AAA	335948	912850	147	63	4/11/2003	43.00				104				
Dasha	13S02W05AAA	335948	912850	147	63	3/24/2003	38.20				108.8				
Dasha	13S02W17ADA1	333421	911858	138							138				
Dasha	13S02W27CAC1	333223.99	911734.76	133	120	2/11/2003	30.90		103.98	102.62	102.1		-1.88	-0.52	
Dasha	13S02W32DBD1	333126	911917	135		4/11/2003	39.00	101.00	100.00	97.00	96	-5.00	-4.00	-1.00	
Dasha	13S03W10DAA1	333505.64	912301.83	140	86	2/11/2003	44.90		102.26	95.80	95.1		-7.16	-0.70	
Dasha	13S03W11CAB1	333503	912241	142		4/11/2003	47.00	102.00	103.00	96.00	95	-7.00	-8.00	-1.00	
												Wells/Declines:	8 of 8	12 of 13	12 of 18
												Average Change:	-7.43	-5.48	-0.20
Drew	11S04W08DBA1	334531.98	913136.2	160	70	2/10/2003	24.70			136.02	135.3			-0.72	
Drew	11S04W09BBB	334550	913404	160							160				
Drew	11S04W09BBB	334550	913404	160		3/14/2003	28.90			131.30	131.1			-0.20	
Drew	11S04W35CCD1	334041	912906	154.21	65						154.21				
Drew	11S04W35CCD1	334041	912906	154.21	65	2/10/2003	26.30			127.21	127.91			0.70	
Drew	11S05W08CCC1	334546.48	913837.16	185	153	2/11/2003	36.30		147.61	149.95	148.7		1.09	-1.25	
Drew	11S06W34DAC2	334239.31	914226.27	209	175	2/11/2003	66.05		145.51	142.80	142.95		-2.56	0.15	
Drew	12S04W03ABB1	334133.92	912946.13	155		2/10/2003	24.00			132.08	131			-1.08	
Drew	12S04W25DBB1	333739	912738	149	90	3/18/2003	34.00	123.70	122.00	121.00	115	-8.70	-7.00	-6.00	

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03	
Drew	12S04W25DBB1	333739	912738	149	90						149				
Drew	13S04W09ACD1	333512	913034	145	90	3/18/2003	16.40	130.06	130.60	128.60	128.6	-1.46	-2.00	0.00	
Drew	13S04W28CDD1	333206.47	912335.8	139	65						139				
Drew	13S04W29CAB1	333231	913206	135	100	3/18/2003	13.00	135.00	123.60	123.00	122	-13.00	-1.60	-1.00	
Drew	13S04W33BAA1	333206	913100	138	130	4/17/2003	15.70				122.3				
Drew	13S04W36DCC	333110	912757	140	70						140				
Drew	13S04W36DCC	333110	912757	140	70	3/14/2003	24.00			114.50	116			1.50	
Drew	13S05W29ADA1	333248	913747	185	50.55	2/10/2003	46.20				138.8				
Drew	13S06W03DDC1	333544.69	914201.6	191	110	2/4/2003	58.70			131.84	132.3			0.46	
Drew	13S06W21DAA1	333324	914258	207	142	3/18/2003	85.00	135.00	135.20	126.00	122	-13.00	-13.20	-4.00	
Drew	14S04W03ADD1	333050	912929	141	92						141				
Drew	14S04W03CBA1	333039	912944	140		3/18/2003	24.00				116				
Drew	14S04W03CBA1	333039	912944	140							140				
Drew	14S04W05CBA1	333047	913218	131	90	3/18/2003	12.00	123.80	121.30	118.00	119	-4.80	-2.30	1.00	
Drew	14S04W05CBC1	333042	913226	131	90	3/18/2003	14.00			117.00	117			0.00	
Drew	14S04W22CAA1	332805	912957	135	100	3/18/2003	20.00	117.00	116.00	119.00	115	-2.00	-1.00	-4.00	
Drew	15S04W12DBB	332942	912744	130	100						130				
Drew	15S04W12DBB	332942	912744	130	100	3/14/2003	38.80			90.70	91.2			0.50	
												Wells/Declines:	6 of 6	7 of 8	8 of 16
												Average Change:	-7.16	-3.57	-0.87
Greene	16N03E03BA1	360315.87	904515.85	260	100	3/3/2003	28.95			231.19	231.05			-0.14	
Greene	16N03E05BBB1	360316	904750	257	105	4/16/2003	28.90			230.10	228.1			-2.00	
Greene	16N03E12BBC1	360218	904333	275	120	4/4/2003	49.70			226.70	225.3			-1.40	
Greene	16N03E16DDD1	360049	904547	258	100	4/16/2003	26.70			232.00	231.3			-0.70	
Greene	16N03E19DBC1	360000	904519	265		3/3/2003	36.75				228.25				
Greene	16N03E29ACC1	355926	904722	257	100	4/16/2003	28.80	237.00	233.70	227.20	228.2	-8.80	-5.50	1.00	
Greene	16N06E03CCC1	360224.07	902625.9	258	194	3/3/2003	38.00		214.07	214.60	220		5.93	5.40	
Greene	16N06E09ABB1	360215	902651	261	90	4/15/2003	45.00	209.50	214.80	208.90	216	6.50	1.20	7.10	
Greene	16N06E21BAA1	360031	902705	249	130	4/15/2003	27.80	225.20	221.40	219.20	221.2	-4.00	-0.20	2.00	
Greene	16N06E28ABB1	355938.31	902657.01	251		3/3/2003	26.65		226.86	222.58	224.35		-2.51	1.77	
Greene	17N03E02BDB1	360830	904412	266	115	3/2/2003	28.64				237.36				
Greene	17N03E02DCC1	360806	904352	267	100	4/1/2003	30.70			237.40	236.3			-1.10	
Greene	17N03E28CDB1	360422	904626	260	100	4/15/2003	28.00	240.40	236.50	232.90	232	-8.40	-4.50	-0.90	
Greene	17N04E07AD1	360718	904122	273	100	4/1/2003	41.90			234.20	231.1			-3.10	
Greene	17N04E29ADD1	360434	904019	282	110	4/16/2003	63.00			222.20	219			-3.20	
Greene	17N04E30CDC1	360409.09	904217.57	265	100	3/3/2003	35.05			230.04	229.95			-0.09	
Greene	17N06E15ABC1	360631	902546	268	168	4/15/2003	39.90	243.00	236.20	232.80	228.1	-14.90	-8.10	-4.70	
Greene	17N06E22CBB1	360520	902521	268	200	4/15/2003	35.50	237.00	236.20	235.40	232.5	-4.50	-3.70	-2.90	
Greene	17N07E03CCC1	360744	901951	246	87	4/15/2003	6.50	240.70	240.00	241.90	239.5	-1.20	-0.50	-2.40	
Greene	17N07E18ABB1	360638.48	902234.73	245		3/3/2003	7.70			239.52	237.3			-2.22	
Greene	17N07E29CBC1	360419	902201	245	80	4/15/2003	3.60	241.70	242.20	243.30	241.4	-0.30	-0.80	-1.90	
Greene	18N03E24ABA1	361141	904234	270		4/15/2003	34.20				235.8				
Greene	18N03E24ABA1	361141	904234	270		3/2/2003	28.50				241.5				
Greene	18N03E24ACA1	361119	904216	271	120						271				
Greene	18N04E04AAC1	361356	903854	273	127	4/15/2003	32.20			244.40	240.8			-3.60	
Greene	18N04E21CBD1	361052.32	903724.76	294		3/2/2003	53.30			240.96	240.7			-0.26	
Greene	18N04E28DAD1	361003	903845	277	100	4/15/2003	38.40			239.10	238.6			-0.50	
Greene	18N06E23ACB1	361056	902357	277	109	4/15/2003	12.10			263.00	264.9			1.90	

Alluvial Aquifer
 Water level Data
 '93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03
Jackson	13N01W27DDD1	354327	910435	233		4/15/2003	34.60				198.4			
Jackson	13N02W34CBB1	354306	911151	240	100	4/1/2003	20.00	226.00	225.00	220.00	220	-6.00	-5.00	0.00
Jackson	13N03W15DCB1	354540	911718	238	80	4/1/2003	16.40	222.60	229.40	226.70	221.6	-1.00	-7.80	-5.10
Jackson	13N03W36ABB1	354337	911532	241	110	4/1/2003	14.40	229.60	229.00	224.80	226.6	-3.00	-2.40	1.80
Jackson	14N01W08AAA1	355216	910623	252	80	4/1/2003	33.80	226.40	223.80	217.50	218.2	-8.20	-5.60	0.70
Jackson	14N01W09AAA1	355220.36	910515.16	251		3/10/2003	39.70				210.64	211.3		0.66
Jackson	14N01W19BBC1	355032	910823	246	100	4/1/2003	29.90				214.80	216.1		1.30
Jackson	14N01W26BCB1	354922	910407	247	110	4/1/2003	42.50	214.00	210.00	203.90	204.5	-9.50	-5.50	0.60
Jackson	14N01W33CCD1	354759	910610	245	100	4/1/2003	38.70	216.00	213.40	206.80	206.3	-9.70	-7.10	-0.50
Jackson	14N02W22BBC1	355026	911145	250	100	4/1/2003	26.20	228.00	228.50	225.50	223.8	-4.20	-4.70	-1.70
Jefferson	03S07W36ACC1	342410	914253	185		4/2/2003	41.70	163.00	157.60	166.00	143.3	-19.70	-14.30	-22.70
Jefferson	03S08W24BBC1	342620.37	914953.19	202	135	3/25/2003	48.45				153.38	153.55		0.17
Jefferson	03S09W06DDA1	342839.9	920036.62	225		3/25/2003	37.00				188.21	188		-0.21
Jefferson	03S09W22AAA1	342639.63	915728.43	218	100	4/8/2003	39.80				179.50	178.2		-1.30
Jefferson	03S09W29CBD1	342516.81	920023.32	216		3/25/2003	25.25				190.10	190.75		0.65
Jefferson	03S09W36ACC1	342428	915555	214		4/8/2003	47.00	187.00	185.20	176.00	167	-20.00	-18.20	-9.00
Jefferson	03S10W25BCA2	342537	920241	216		4/8/2003	16.50				198.00	199.5		1.50
Jefferson	03S10W26BBB2	342427	920249	215		4/8/2003	14.40	205.00	198.90	197.50	200.6	-4.40	1.70	3.10
Jefferson	04S07W08CBB1	342226	914745	195		3/25/2003	53.05					141.95		
Jefferson	04S07W35DDB1	341836	914347	185		4/2/2003	25.70	163.50	161.90	158.50	159.3	-4.20	-2.60	0.80
Jefferson	04S08W13DCB1	342122.85	914926.45	204	110	3/25/2003	42.25				160.30	161.75		1.45
Jefferson	04S08W33CDA1	341848	915244	209		4/7/2003	27.30	182.90	181.00	178.00	181.7	-1.20	0.70	3.70
Jefferson	04S09W02CBD1	342325	915717	212	110	4/7/2003	32.80				180.00	179.2		-0.80
Jefferson	04S09W32DDA1	341859	920008	212		4/8/2003	19.00	197.20	194.80	194.00	193	-4.20	-1.80	-1.00
Jefferson	05S07W29DDD1	341410.52	914653.88	194	110							194		
Jefferson	05S08W12DAA1	341712	914907	194.25	101	3/26/2003	16.55				177.54	177.7		0.16
Jefferson	06S05W15BCA1	341022.95	913245	177.14	120	2/13/2003	19.50				156.94	157.64		0.70
Jefferson	06S06W23AAD1	341006.74	913712.2	189.01	107	3/25/2003	18.60			173.36	169.75	170.41		-2.95
Jefferson	06S07W14BAA1	341124.96	914425.73	199	110	3/25/2003	15.60				183.86	183.4		-0.46
Jefferson	07S07W16BAA1	340722	914828	190		4/2/2003	25.30				161.00	164.7		3.70
Jefferson	07S07W18CAC1	340647.02	915036.77	186	65	3/24/2003	25.70				160.18	160.3		0.12
Jefferson	07S08W06BAA1	340858.53	915647.26	202.31	160	3/24/2003	18.30			186.01	182.67	184.01		-2.00
Lawrence	15N01E11ADD1	355657	905638	255	100	4/2/2003	40.50	220.40	218.60	214.20	214.5	-5.90	-4.10	0.30
Lawrence	15N01E23DAD1	355502	905637	250	100	4/8/2003	43.00	217.80	211.70	205.60	207	-10.80	-4.70	1.40
Lawrence	15N01E26DDA1	355401.91	905639.34	251	100	3/4/2003	48.15				201.45	202.85		1.40
Lawrence	15N01W03BAB1	355831	910441	259	105	4/10/03	35.10	223.30	231.60	221.50	223.9	0.60	-7.70	2.40
Lawrence	15N01W35CBB1	355336.15	910356.33	250							250			
Lawrence	15N01W35CBB1	355336.15	910356.33	250		3/4/2003	43.25				206.95	206.75		-0.20
Lawrence	16N01E11DAC2	360203.04	905639.37	262		3/3/2003	44.80				217.84	217.2		-0.64
Lawrence	16N01E27ADC1	355938	905750	260		3/4/2003	49.10				213.20	210.9		-2.30
Lawrence	16N01E35AAA1	355908	905632	256	105						256			
Lawrence	16N01W30DDC1	355936.93	910723.26	255	105	4/10//03	23.00			237.91	233.00	232	-5.91	-1.00

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03
Lee	03N03E18DAB1	345206	904919	196	140	4/28/2003	30.00	178.00	176.00	166.00	166	-12.00	-10.00	0.00
Lee	03N03E32CAB1	344932.65	904926.23	204	116	3/18/2003	48.30			155.20	155.7			0.50
Lee	03N04E07CBB1	345245	904312	200	140	4/25/2003	29.00	174.10	175.50	168.50	171	-3.10	-4.50	2.50
Lee	03N05E03ADB1	345403	903316	197	140	4/28/2003	20.00	176.70	177.00	175.50	177	0.30	0.00	1.50
Lee	03N05E14DDA1	345148.08	903203.25	193	120	3/18/2003	12.65			179.04	180.35			1.31
Lee	03N05E26ADC1	345020	903215	185	140	4/28/2003	5.00	176.30	179.50	178.50	180	3.70	0.50	1.50
												Wells/Declines:	21 of 23	17 of 25
												Average Change:	-7.69	-3.23
													0.09	
Lincoln	07S06W03CCA2	340828	914114	190	110	3/17/2003	19.00	178.00	175.00	177.00	171	-7.00	-4.00	-6.00
Lincoln	07S07W36CBD1	340411	914529	183	123	3/17/2003	37.00	159.00	158.00	142.00	146	-13.00	-12.00	4.00
Lincoln	08S04W06ABD1	340341	913116	171	95	3/17/2003	14.00	159.00	160.00	154.00	157	-2.00	-3.00	3.00
Lincoln	08S04W08BBB2	340253.92	913100.76	171	65.2	2/17/2003	19.45			141.24	151.55			10.31
Lincoln	08S04W29ABC1	340021	913044	176	100	3/17/2003	46.00	144.00	140.00	134.00	130	-14.00	-10.00	-4.00
Lincoln	08S04W31CBA1	335901.09	913149.69	161.9	99	2/17/2003	32.30			137.42	130.42	129.6		-7.82
Lincoln	08S05W12AAD1	340246	913214	165	83	3/17/2003	21.00	151.00	149.00	144.00	144	-7.00	-5.00	0.00
Lincoln	08S05W21DCD1	340027	913533	169	120	3/17/2003	34.00			133.00	135			2.00
Lincoln	08S05W32DCC1	335840	913644	172	100	3/17/2003	45.00	142.00	137.00	128.00	127	-15.00	-10.00	-1.00
Lincoln	08S06W02ACB1	340338.84	913957.73	181.03	68	2/19/2003	41.65			147.45	139.64	139.38		-8.07
Lincoln	08S07W05DDD1	340300.81	914902.72	190	97	2/17/2003	30.00				161.32	160		-1.32
Lincoln	09S04W06CBB1	335721	913252	163	110	3/17/2003	40.00	139.00			131.00	123	-16.00	-8.00
Lincoln	09S05W08CCB1	335619	913820	171		2/17/2003	36.30			141.58	133.20	134.7		-6.88
Lincoln	09S05W13CDB1	335505	913350	173.8		4/17/2003	42.40					131.4		
Lincoln	09S05W14ABC1	335553.02	913439.08	172.5	98	2/17/2003	37.05			142.59	135.88	135.45		-7.14
Lincoln	09S05W34BAB1	335319	913614	170		2/17/2003	33.40				134.80	136.6		1.80
Lincoln	09S06W04BCD1	335821.38	914345.83	181	62.6	2/17/2003	40.10				142.15	140.9		-1.25
Lincoln	09S06W04BDD1	335759	914335	178	100	3/17/2003	38.00			151.00	140.00	140		-11.00
Lincoln	09S06W23CDB1	335439.57	914136.37	175	70	2/17/2003	31.90	151.00			145.73	143.1	-7.90	-2.63
Lincoln	10S05W04BBB1	335233	913725	170		2/17/2003	29.00				140.80	141		0.20
Lincoln	10S05W06DCC1	335155.3	913907.96	175	65									
												Wells/Declines:	8 of 8	11 of 11
												Average Change:	-10.24	-7.72
													-0.15	
Lonoke	01N07W27AAD1	344103.48	914410.4	220	148	2/21/2003	129.35			88.45	90.65			2.20
Lonoke	01N08W03DDA1	344411	915050	229		4/10/2003	130.70	114.20	109.80	99.50	98.3	-15.90	-11.50	-1.20
Lonoke	01N08W26CCB1	344034.61	915043.43	212	155	2/21/2003	101.50			111.33	110.5			-0.83
Lonoke	01N09W07DAA1	344337	920029	240		4/10/2003	50.20			190.80	189.8			-1.00
Lonoke	01N09W13DAB1	344235.17	915517.01	226	150	2/7/2003	87.20			140.25	138.8			-1.45
Lonoke	01N10W11BBD1	344356.39	920322.8	240	100	2/21/2003	31.00			209.45	209			-0.45
Lonoke	01N10W15CDA1	344236	920414	240	100	4/10/2003	27.00	221.90	219.70	209.20	213	-8.90	-6.70	3.80
Lonoke	01S06W31ABB1	343459.39	914131.48	200	120	2/21/2003	77.70			121.63	122.3			0.67
Lonoke	01S06W32BBB1	343501	914056	201		4/10/2003	76.00	131.80	129.10	121.70	125	-6.80	-4.10	3.30
Lonoke	01S07W12ABA1	343834.31	914229.84	207	140	2/21/2003	67.02			139.70	139.98			0.28
Lonoke	01S07W12BCB1	343820	91430801	211		2/21/2003	133.13				77.87			
Lonoke	01S08W24CDD1	343605.64	914912.37	210	127	2/21/2003	79.65			136.50	130.35			-6.15
Lonoke	01S09W02DDD1	343857	915623	230		4/10/2003	88.40			141.50	141.6			0.10
Lonoke	01S09W36CCC1	343435.31	915618.98	220	95	2/21/2003	61.00				159			
Lonoke	01S09W36CCC1	343435.31	915618.98	220	95	4/10/2003	59.90	168.80	165.74	159.24	160.1	-8.70	-5.64	0.86

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03
Lonoke	01S10W01ACB1	343926.84	920214.96	236		2/21/2003	46.03			190.00	189.97			-0.03
Lonoke	02N07W07DAA1	344845	914707	232		4/10/2003	127.00	113.60	113.50	99.40	105	-8.60	-8.50	5.60
Lonoke	02N07W16BAB1	344815.2	914539.5	240	184	3/7/2003	135.60			104.91	104.4			-0.51
Lonoke	02N08W16ABC1	344806.48	915113.61	230	128	3/7/2003	119.45			119.44	111.60	110.55		-8.89
Lonoke	02N08W23CAB1	344659	915118	229		4/10/2003	135.70	107.40	102.00	95.50	93.3	-14.10	-8.70	-2.20
Lonoke	02N09W17CBC1	344752.88	920010.22	255		3/17/2003	87.80			165.01	167.2			2.19
Lonoke	02N09W17CBC2	344751.15	920009.72	255		3/17/2003	84.10			169.08	170.9			1.82
Lonoke	02N09W17CBC3	344746.53	920007.5	255		3/17/2003	82.90			171.03	172.1			1.07
Lonoke	02N09W18DAA1	344755.22	920021.98	255		3/17/2003	82.45			170.65	172.55			1.90
Lonoke	02N09W18DAD2	344754.06	920020.27	255		3/17/2003	82.40			171.45	172.6			1.15
Lonoke	02N09W18DAD3	344754.13	920011.27	255		3/17/2003	86.50			164.58	168.5			3.92
Lonoke	02N10W23BCA1	344725.25	920322.15	242		3/17/2003	4.25			239.10	237.75			-1.35
Lonoke	02S07W05CDC1	343326	914715	205		4/10/2003	68.30			138.10	136.7			-1.40
Lonoke	02S07W10CCB1	343246.45	914524.67	201		2/20/2003	61.45			139.97	139.55			-0.42
Lonoke	02S07W20ACD1	343112	914655	201		4/10/2003	58.90			142.30	142.1			-0.20
Lonoke	02S08W34DBB1	343002.96	915149.75	214		2/20/2003	61.50			153.33	152.5			-0.83
Lonoke	02S09W30CDD1	343014.34	920116.01	226	80	2/20/2003	36.90			189.44	189.1			-0.34
Lonoke	02S09W35AB1	343008	915652	217	100	4/10/2003	54.60			166.00	162.4			-3.60
Lonoke	03N07W08BDB1	345406.62	914638.28	250	125						250			
Lonoke	03N07W08BDB1	345406.62	914638.28	250	125						250			
Lonoke	03N07W08BDB1	345406.62	914638.28	250	125						250			
Lonoke	03N07W15DBC2	345252.79	914416.62	227	144.5	3/7/2003	79.55			149.64	147.78	147.45		-2.19
Lonoke	03N07W29ADA1	345128.53	914558.4	234	120	4/10/2003	97.00			146.70	137			-9.70
Lonoke	03N07W29ADA1	345128.53	914558.4	234	120						234			
Lonoke	03N07W29ADA1	345128.53	914558.4	234	120						234			
Lonoke	03N07W35CDC2	344957.16	914332.11	232		3/7/2003	114.40			118.78	117.6			-1.18
Lonoke	03N08W03BAA1	345518.54	915053.52	260	162						260			
Lonoke	03N08W03BAA1	345518.54	915053.52	260	162						260			
Lonoke	03N08W03BAA1	345518.54	915053.52	260	162						260			
Lonoke	03N08W03CCC1	345429.86	915123.2	260	162						260			
Lonoke	03N08W03CCC1	345429.86	915123.2	260	162						260			
Lonoke	03N08W03CCC1	345429.86	915123.2	260	162						260			
Lonoke	03N08W05CCC1	345429.38	915323.47	257	130						257			
Lonoke	03N08W05CCC1	345429.38	915323.47	257	130						257			
Lonoke	03N08W05CCC1	345429.38	915323.47	257	130						257			
Lonoke	03N08W08ABA1	345426.98	915247.87	258	150						258			
Lonoke	03N08W08ABA1	345426.98	915247.87	258	150						258			
Lonoke	03N08W08ABA1	345426.98	915247.87	258	150						258			
Lonoke	03N08W08ABA1	345426.98	915247.87	258	150						258			
Lonoke	03N08W10ACB1	345414.65	915052.74	250	150						250			
Lonoke	03N08W10ACB1	345414.65	915052.74	250	150						250			
Lonoke	03N08W10ACB1	345414.65	915052.74	250	150						250			
Lonoke	03N08W10ADD1	345401.06	915022.78	250	165						250			
Lonoke	03N08W10ADD1	345401.06	915022.78	250	165						250			
Lonoke	03N08W10ADD1	345401.06	915022.78	250	165						250			
Lonoke	03N08W11ABD1	345419.05	914935.94	260	160						260			
Lonoke	03N08W11ABD1	345419.05	914935.94	260	160						260			
Lonoke	03N08W11ACA1	345412.72	914934.26	256	144						256			
Lonoke	03N08W11ACA1	345412.72	914934.26	256	144						256			
Lonoke	03N08W11ACA1	345412.72	914934.26	256	144						256			

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03
Lonoke	03N08W21BCC1	345220.21	915220.21	247	155	3/7/2003	102.30		190.47	167.65	144.7		-45.77	-22.95
Lonoke	03N08W26CDC1	345100	915007	235	150						235			
Lonoke	03N08W29BBB1	345147.1	915332.81	249	152.2						249			
Lonoke	03N08W29BBB1	345147.1	915332.81	249	152.2						249			
Lonoke	03N08W29BBB1	345147.1	915332.81	249	152.2						249			
Lonoke	03N08W29BCC1	345125.01	915333.4	250	150						250			
Lonoke	03N08W29BCC1	345125.01	915333.4	250	150						250			
Lonoke	03N08W29BCC1	345125.01	915333.4	250	150						250			
Lonoke	03N08W32ABB2	345057	915258	250	154	3/7/2003	130.95			134.32	119.05			-15.27
Lonoke	03N08W32ABB3	345058.68	915255.43	250	170	3/7/2003	52.10			192.96	197.9			4.94
Lonoke	03N08W34ADD1	345034.89	915028.32	240	130						240			
Lonoke	03N08W34ADD1	345034.89	915028.32	240	130						240			
Lonoke	03N08W34ADD1	345034.89	915028.32	240	130						240			
Lonoke	03N10W34ABB1	345101.07	920351.5	257	116	3/17/2003	56.90		201.76	199.50	200.1		-1.66	0.60
Lonoke	04N08W05ACA1	350020.48	915246.51	238	138						238			
Lonoke	04N08W05ACA1	350020.48	915246.51	238	138						238			
Lonoke	04N08W05ACA1	350020.48	915246.51	238	138						238			
Lonoke	04N08W10BDD1	345917.09	915055.45	218	130						218			
Lonoke	04N08W10BDD1	345917.09	915055.45	218	130						218			
Lonoke	04N08W10BDD1	345917.09	915055.45	218	130						218			
Lonoke	04N08W15BCB2	345832.92	915121.25	225	104	3/7/2003	32.80		195.32	192.92	192.2		-3.12	-0.72
Lonoke	04N08W16DCC1	345757.26	915154.02	225	155						225			
Lonoke	04N08W16DCC1	345757.26	915154.02	225	155						225			
Lonoke	04N08W16DCC1	345757.26	915154.02	225	155						225			
Lonoke	04N08W19BBB1	345753.4	915431.8	300	34						300			
Lonoke	04N08W19BBB1	345753.4	915431.8	300	34						300			
Lonoke	04N08W19BBB1	345753.4	915431.8	300	34						300			
Lonoke	04N08W20ADD1	345735.25	915229.26	248	90						248			
Lonoke	04N08W20ADD1	345735.25	915229.26	248	90						248			
Lonoke	04N08W20ADD1	345735.25	915229.26	248	90						248			
Lonoke	04N08W26AAD1	345652.24	914916.76	246	130						246			
Lonoke	04N08W26AAD1	345652.24	914916.76	246	130						246			
Lonoke	04N08W26AAD1	345652.24	914916.76	246	130						246			
Lonoke	04N08W28CAC1	345620.27	915215.78	235	140.5						235			
Lonoke	04N08W28CAC1	345620.27	915215.78	235	140.5						235			
Lonoke	04N08W28CAC1	345620.27	915215.78	235	140.5						235			
Lonoke	04N08W28CAD1	345626.08	915203.96	249	115						249			
Lonoke	04N08W28CAD1	345626.08	915203.96	249	115						249			
Lonoke	04N08W28CAD1	345626.08	915203.96	249	115						249			
Lonoke	04N08W28CCC1	345614.57	915225.31	240	137						240			
Lonoke	04N08W28CCC1	345614.57	915225.31	240	137						240			
Lonoke	04N08W28CCC1	345614.57	915225.31	240	137						240			
Lonoke	04N08W31CBB2	345547.43	915439.07	283	50						283			
Lonoke	04N08W31CBB2	345547.43	915439.07	283	50						283			
Lonoke	04N08W31CBB2	345547.43	915439.07	283	50						283			
Lonoke	04N08W36DBB1	345540.53	914914.42	259	130						259			
Lonoke	04N08W36DBB1	345540.53	914914.42	259	130						259			
Lonoke	04N08W36DBB1	345540.53	914914.42	259	130						259			
											Wells/Declines:	6 of 6	11 of 11	23 of 39
											Average Change:	-10.50	-9.71	-0.99

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03	
Phillips												Wells/Declines:	7 of 14	7 of 16	9 of 22
Phillips												Average Change:	-2.43	-0.08	0.11
Poinsett	10N01E02AAA	353205	905654	235	100	3/19/2003	97.00	153.50	148.00	142.00	138	-15.50	-10.00	-4.00	
Poinsett	10N01E14CC1	352909.77	905813.38	231	150	3/5/2003	89.20			143.52	141.8			-1.72	
Poinsett	10N01E16CCB1	352921.87	910005.35	225	120	3/5/2003	71.95			154.18	153.05			-1.13	
Poinsett	10N01E32CBB1	352657	910053	222	120	3/19/2003	71.00	182.00	177.00	172.00	151	-31.00	-26.00	-21.00	
Poinsett	10N01E33ACB1	352746	905931	220	153	3/19/2003	74.00	158.00	153.00	146.00	146	-12.00	-7.00	0.00	
Poinsett	10N02E13BCC1	352948.52	905026.29	237	167	3/5/2003	100.30	147.00	137.84	137.79	136.7	-10.30	-1.14	-1.09	
Poinsett	10N02E20BAB1	352906	905418	237	155	3/19/2003	98.00	152.00	146.00	138.00	139	-13.00	-7.00	1.00	
Poinsett	10N03E14DAB1	352947.21	904404.93	263		3/5/2003	116.70			148.38	146.3			-2.08	
Poinsett	10N03E35CDD1	352656.17	904435.97	275		4/24/2003	NM								
Poinsett	10N05E15BDD1	352937.32	903252.64	207		3/4/2003	10.50			194.34	195.55	196.5		2.16	0.95
Poinsett	10N06E11AAA1	353045	902501	212		3/4/2003	12.90					199.1			
Poinsett	10N07E22AAC1	352847	901935	215		3/4/2003	29.00			186.80	186			-0.80	
Poinsett	11N01E17DDC1	353437	910015	232	100	3/19/2003	78.00	167.00	162.00	156.00	154	-13.00	-8.00	-2.00	
Poinsett	11N01E17DDD1	353436.83	910013.21	230	100	3/5/2003	74.70			155.40	155.3			-0.10	
Poinsett	11N01E34AAA	353256	905759	229	100	3/20/2003	87.00	156.00	151.00	145.00	142	-14.00	-9.00	-3.00	
Poinsett	11N02E10CBC1	353555	905228	245	170	3/19/2003	116.00	142.00	136.00	129.00	129	-13.00	-7.00	0.00	
Poinsett	11N02E26AAB1	353350.31	905034.19	241	158	3/5/2003	104.90	143.10	141.14	136.93	136.1	-7.00	-5.04	-0.83	
Poinsett	11N02E30BBB1	353352	905540	239	100	3/19/2003	102.00	148.00	146.00	141.00	137	-11.00	-9.00	-4.00	
Poinsett	11N02E34CBA1	353238	905222	240	130	3/19/2003	93.00	144.00	149.00	145.00	147	3.00	-2.00	2.00	
Poinsett	11N03E10DDA1	353545.69	904456.54	243	145	3/5/2003	102.75			141.00	140.25			-0.75	
Poinsett	11N03E18BAB1	353537.76	904852.42	243	157							243			
Poinsett	11N04E36ABA1	353251	903654	211	100	3/20/2003	17.00	195.50	195.00	182.00	194	-1.50	-1.00	12.00	
Poinsett	11N07E18CAB1	353435	902320	217	100	3/4/2003	12.60			202.66	204.4			1.74	
Poinsett	11N07E22ADD1	353349	901922	218		3/4/2003	23.20					194.8			
Poinsett	12N01E07CDA1	354053.69	910141.25	236	120							236			
Poinsett	12N01E07CDA1	354053.69	910141.25	236	120	3/5/2003	50.90			186.92	183.50	185.1		-1.82	1.60
Poinsett	12N01E22DAB1	353922	905809	235	115	3/19/2003	72.00	173.00	168.00	163.00	163	-10.00	-5.00	0.00	
Poinsett	12N02E25DCC1	353820	904944	245	145	3/19/2003	108.00	146.00	145.00	137.00	137	-9.00	-8.00	0.00	
Poinsett	12N02E34CCC1	353724	905230	245	180	3/19/2003	109.00	149.00	142.00	136.00	136	-13.00	-6.00	0.00	
Poinsett	12N03E01CBD1	354154	904329	250	190	3/19/2003	100.00	168.00	164.00	159.00	150	-18.00	-14.00	-9.00	
Poinsett	12N03E04DAD1	354158.01	904600.16	247	120	3/19/2003	101.00	158.00	150.86	146.19	146	-12.00	-4.86	-0.19	
Poinsett	12N03E04DAD1	354158.01	904600.16	247	120							247			
Poinsett	12N03E36ACB1	353749.4	904318.72	250	120	3/5/2003	98.40			154.34	151.6			-2.74	
Poinsett	12N04E08CDA	354053	904112	250	100	3/19/2003	86.00	173.00	169.00	164.00	164	-9.00	-5.00	0.00	
Poinsett	12N05E16ABA1	354039	903333	221	140	3/20/2003	10.00	212.00	212.00	211.00	211	-1.00	-1.00	0.00	
Poinsett	12N05E34ABA1	353805.38	903230.45	215	100	3/4/2003	5.10			207.82	205.50	209.9		2.08	4.40
Poinsett	12N07E04BAA1	354201.95	902059.69	223	60							223			
Poinsett	12N07E04BAA1	354201.95	902059.69	223	60	3/4/2003	4.20			217.49	218.76	218.8	1.31	0.04	
												Wells/Declines:	18 of 19	20 of 23	16 of 31
												Average Change:	-11.07	-5.75	-0.99
Prairie	01N06W05CCB1	344352.97	914049.08	220	155	2/18/2003	117.10			103.55	102.9			-0.65	
Prairie	01N06W26CDD1	344014.88	913707.61	218	105	2/18/2003	67.60			148.19	150.4			2.21	
Prairie	01S04W28BBC1	343529	912650	206	180	4/28/2003	100.60	111.00	110.20	106.50	105.4	-5.60	-4.80	-1.10	
Prairie	01S04W28BDB1	343522.68	912629.73	205	112	2/18/2003	97.80			121.83	107.2			-14.63	

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03	
Prairie	01S05W14BBC1	343721.96	913108.76	211	118						211				
Prairie	02N04W02BCB1	344916.31	912418.61	188	140	2/24/2003	17.70		166.69	167.35	170.3		3.61	2.95	
Prairie	02N04W32CCB1	344436.43	912737.79	221		2/18/2003	85.10		139.08	136.92	135.9		-3.18	-1.02	
Prairie	02N05W06BAB1	344957.63	913420.77	221	145	3/3/2003	88.07			132.60	132.93			0.33	
Prairie	02N05W13AAB1	344805.45	912854.34	223	130						223				
Prairie	02N05W13AAB1	344805.45	912854.34	223	130	2/17/2003	78.50			146.80	144.5			-2.30	
Prairie	02N05W29DDB2	344545.22	913308.75	228	135	2/18/2003	118.10			111.11	109.9			-1.21	
Prairie	02N05W32AAA1	344534	913305	225		2/11/2003	118				107				
Prairie	02N06W17ABB1	344809.48	913959.44	235	180	2/18/2003	123.60			112.82	111.4			-1.42	
Prairie	02S06W14BBB1	343213.38	913728.62	201	105	2/18/2003	58.25		142.22	125.35	142.75		0.53	17.40	
Prairie	03N05W03BDD2	345444.06	913115.35	207	110	2/19/2003	64.00			142.88	143			0.12	
Prairie	03N06W01BCB1	345454.54	913601.39	216	115						216				
Prairie	03N06W01BCB1	345454.54	913601.39	216	115	2/11/2003	135.40			138.61	135.4			-3.21	
Prairie	03N06W19BDD1	345207.24	914110.17	221	105	2/24/2003	82.10			137.27	138.9			1.63	
Prairie	04N04W07ADC1	345850.31	912733.07	195	110	2/18/2003	23.50		171.51	170.48	171.5		-0.01	1.02	
Prairie	04N05W07CDC1	345042.62	913440.92	212		2/11/2003	75.10		138.63	137.67	136.9		-1.73	-0.77	
Prairie	04N05W31DDC1	345513.66	913405.83	206	104	2/19/2003	75.50			130.82	130.5			-0.32	
Prairie	04N06W05CCC1	345933.76	914017.96	206	100	2/18/2003	59.80			144.98	146.2			1.22	
Prairie	04N07W03DCB1	345942.1	914412.48	255	100	2/19/2003	87.80			169.07	167.2			-1.87	
Prairie	04N07W20ddb1	345709.23	914607.27	255	160						255				
Prairie	04N07W20ddb1	345709.23	914607.27	255	160						255				
Prairie	04N07W20ddb1	345709.23	914607.27	255	160						255				
Prairie	04N07W28BBA1	345700.53	914544.88	258	110	2/24/2003	94.20			164.92	163.8			-1.12	
Prairie	05N05W14DCD1	350252.43	913034.06	205							205				
Prairie	05N05W14DCD1	350252.43	913034.06	205		2/11/2003	39.00		171.98	169.00	166		-5.98	-3.00	
Prairie	05N05W25BAA1	350153	912949	187	100	4/29/2003	18.50	175.00	176.50	169.80	168.5	-6.50	-8.00	-1.30	
Prairie	05N05W28DDA1	350119	913228	191	85	4/29/2003	31.80		162.60	168.50	159.2		-3.40	-9.30	
												Wells/Declines:	2 of 2	7 of 9	15 of 23
												Average Change:	-6.05	-2.55	-0.71
Pulaski	01S10W29CC1	343537.78	920707.66	239	100	3/26/2003	15.85			221.87	223.15			1.28	
Pulaski	02N10W05BCC1	344953	920635	239							239				
Pulaski	02N10W05BCC1	344953	920635	239		3/26/2003	23.45		218.04		215.55		-2.49		
Pulaski	02S10W14DC1	343204.71	920333.75	225	60						225				
Pulaski	02S10W14DC1	343204.71	920333.75	225	60	3/26/2003	22.20			199.03	202.8			3.77	
Pulaski	02S10W16CCA1	343216.99	920549.36	230.76		3/26/2003	23.00			208.78	207.76			-1.02	
Pulaski	02S11W23BCB1	343151	921024	236.76		3/26/2003	24.85		230.03		211.91		-18.12		
												Wells/Declines:	2 of 2	1 of 3	
												Average Change:	-10.31	1.34	
Randolph	18N01E13BAB1	361230	905551	266	100	4/28/2003	14.30	257.30	255.90	250.60	251.7	-5.60	-4.20	1.10	
Randolph	18N01E28AAD1	361040	905820	265	120	4/28/2003	18.50	250.60	252.30	249.30	246.5	-4.10	-5.80	-2.80	
Randolph	18N01E34AAC1	360942.69	905729.13	266		3/12/2003	16.10	251.38	249.37	249.9		-1.48	0.53		
Randolph	18N02E03DAD1	361336	905043	280	120	4/28/2003	32.00	257.10	255.60	247.60	248	-9.10	-7.60	0.40	
Randolph	18N02E17CBB1	361204	905356	265		4/28/2003	15.60	252.10		248.90	249.4	-2.70		0.50	
Randolph	18N02E20BDA1	361125	905332	274	110	4/28/2003	39.10	247.30		241.50	234.9	-12.40		-6.60	
Randolph	18N02E22DCD1	361045.76	905104.7	273	110	3/11/2003	36.00			236.66	237			0.34	
Randolph	19N02E04AAB1	361930	905145	268	80	4/28/2003	20.10	262.40	261.00	261.50	247.9	-14.50	-13.10	-13.60	

Alluvial Aquifer
Water level Data
'93-'98-'02-'03

County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03
Randolph	19N02E09ABD1	361826	905157	266	80	4/28/2003					266			
Randolph	19N02E09DCA1	361759	905158	267		3/11/2003	10.40				256.6			
Randolph	19N02E09DCA1	361759	905158	267		4/28/2003	8.10		264.29		258.9		-5.39	
Randolph	19N02E22DAB1	361622	905049	266	90	4/28/2003	6.40	256.70		265.70	259.6	2.90		-6.10
Randolph	20N02E01ADD1	362424.21	904811.39	280	65	3/11/2003	11.35			270.56	268.65			-1.91
Randolph	20N02E12BAA1	362352	904848	281	60	4/28/2003	6.50	273.90	270.90	276.70	274.5	0.60	3.60	-2.20
Randolph	20N02E14DAB1	362232	904930	274	100	4/28/2003	8.20	262.20	264.10	265.10	265.8	3.60	1.70	0.70
Randolph	20N02E21CDD1	362117	905107	270	110	4/28/2003	11.60	266.50	261.50	263.80	258.4	-8.10	-3.10	-5.40
Randolph	20N03E06DAD1	362406	904707	281	65	4/28/2003	11.60	277.30		274.50	269.4	-7.90		-5.10
Randolph	20N03E07AAD1	362424	904811	281	65	4/28/2003					281			
Randolph	20N03E28BA1	362113.53	904537.97	276		3/11/2003	11.70			264.25	264.3			0.05
Randolph	20N03E33CCA1	361941	904552	287		4/28/2003	20.00	266.90	268.40	265.30	267	0.10	-1.40	1.70
St. Francis	04N01E05AAA1	345952	910054	207	140						207			
St. Francis	04N01E13ADA1	345754.94	905638.2	206							206			
St. Francis	04N01W20BBB1	345716	910759	200	140	4/29/2003	57.50	148.50	147.00	143.00	142.5	-6.00	-4.50	-0.50
St. Francis	04N01W25DBD1	345549	910303	199	140	4/29/2003	74.00	132.00	129.00	131.00	125	-7.00	-4.00	-6.00
St. Francis	04N01W28CDD1	345535.26	910633.55	208							208			
St. Francis	04N01W28CDD1	345535.26	910633.55	208		3/25/2003	69.75			140.00	138.25			-1.75
St. Francis	04N02E03DDD3	345848	905219	210	151	3/25/2003	42.20			167.74	167.8			0.06
St. Francis	04N02E16ACD1	345733	905341	209	140	4/29/2003	51.00			160.00	158			-2.00
St. Francis	04N02E19BBB1	345701	905633	209	72.2	3/25/2003	57.75			152.92	151.25			-1.67
St. Francis	04N02E27AAA1	345604	905220	211	140	4/29/2003	46.00			165.00	165			0.00
St. Francis	04N04E15ABA1	345752	903948	201	120	4/30/2003	33.00	168.00		169.00	168	0.00		-1.00
St. Francis	04N05E22BBB1	345650.62	903356.75	200							200			
St. Francis	05N01E06CDA1	350437	910218	211							211			
St. Francis	05N01E15BCB1	350302.57	905942.41	209	94.1	3/5/2003	63.50			147.66	145.5			-2.16
St. Francis	05N01E27BBA1	350135.73	905928.78	209		3/15/2003	65.80			145.37	143.2			-2.17
St. Francis	05N02E20ADC1	350156.9	905437.16	211	79	3/15/2003	56.95			157.43	154.05			-3.38
St. Francis	05N03E20AAA2	350214.31	904800.83	250	153.45	3/25/2003	92.15				157.85			
St. Francis	05N05E19DCA1	350127.57	903630.35	203	110	3/26/2003	33.56			16877.00	169.44			
St. Francis	05N05E21CAB1	350144	903448	203	140						203			
St. Francis	05N05E33BCC1	350004	903506	196	120	4/30/2003	29.00			168.00	167			-1.00
St. Francis	05N06E05BBB1	350508	902922	195	120						195			
St. Francis	05N06E34CAB1	350025.57	902656.87	200	110						200			
St. Francis	05N06E34CAB1	350025.57	902656.87	200	110	3/26/2003	26.90		176.93	171.95	173.1		-3.83	1.15
St. Francis	06N01E33ACA1	350559	905943	211	140						211			
St. Francis	06N01E33ACA2	350552.33	905941.6	211							211			
St. Francis	06N02E13DCA1	350812.64	905002.71	231							231			
St. Francis	06N02E15BDD1	350841.91	905247.31	214.64	75	3/25/2003	57.70		162.82	162.41	156.94		-5.88	-5.47
St. Francis	06N02E16CCC1	350804	905403	216	120						216			
St. Francis	06N02E24AAA1	350755.19	905002.42	232	147						232			
St. Francis	06N02E24AAA1	350755.19	905002.42	232	147	3/25/2003	73.60			161.74	158.4			-3.34
St. Francis	06N03E17CAA1	350822	904810	258		4/29/2003	102.00		163.00	157.00	156		-7.00	-1.00
St. Francis	06N04E36CCD1	350512	903744	200	120						200			
St. Francis	06N05E22ACC1	350723.36	903252.21	200							200			
St. Francis	06N06E20ABB2	350747.06	902841.2	200	150	3/26/2003	35.20			166.00	164.8			-1.20

Alluvial Aquifer
 Water level Data
 '93-'98-'02-'03

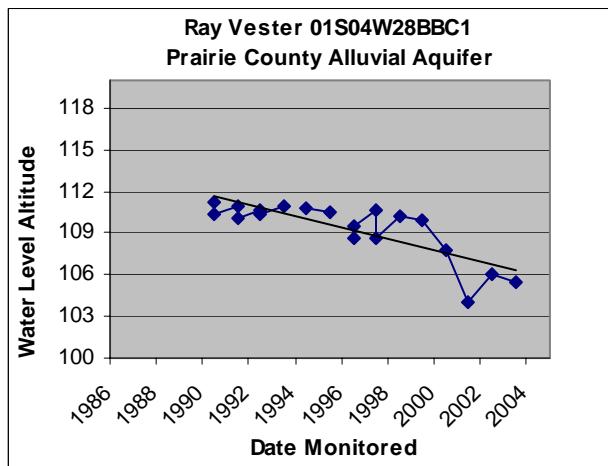
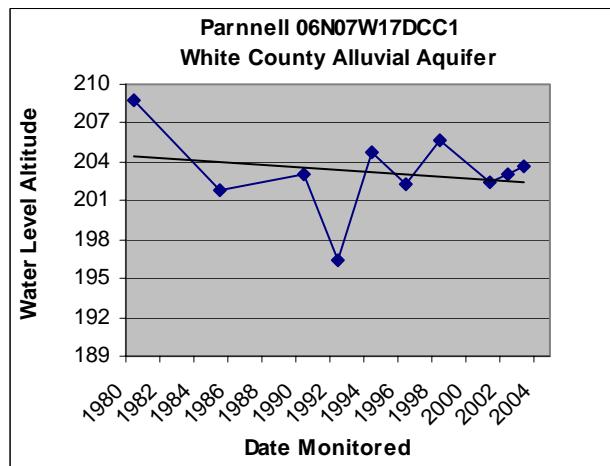
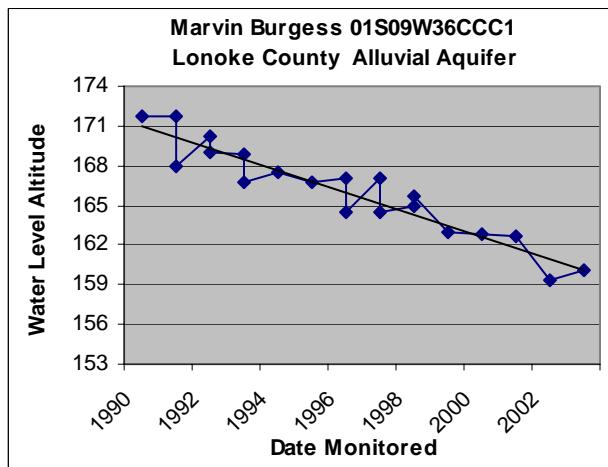
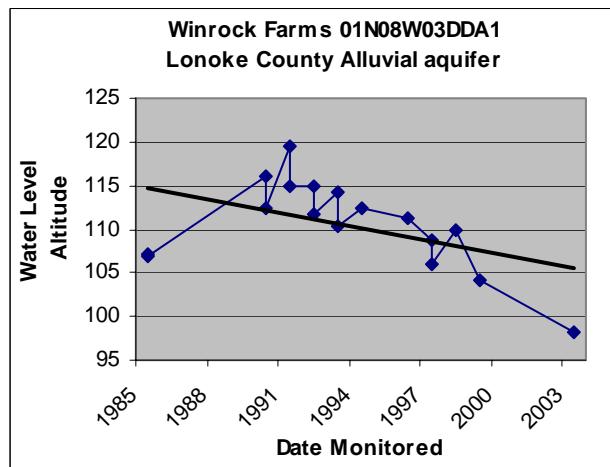
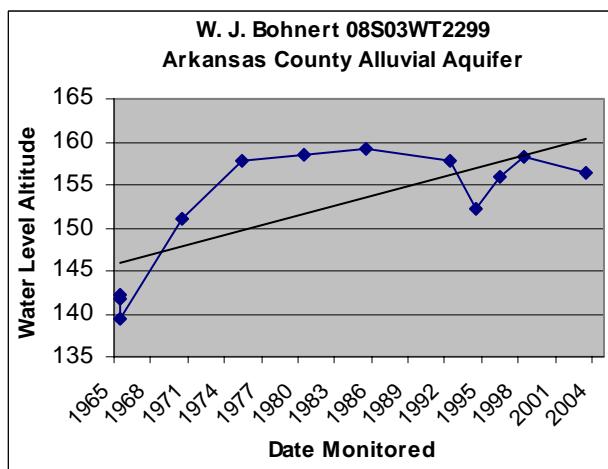
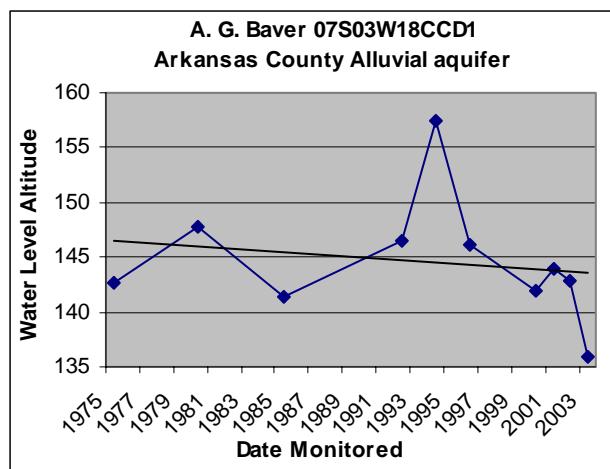
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St. Francis												Wells/Declines:	2 of 3	5 of 5
St. Francis												Average Change:	-4.33	-5.04
White	05N07W09AAA1	350446.87	914441.48	205	29.5						205			
White	05N07W09AAA1	350446.87	914441.48	205	29.5	2/10/2003	13.10	189.66	185.90	191.9		2.24	6.00	
White	05N07W10CCC1	350400.22	914436	203	80	2/10/2003	8.20			195.32	194.8			-0.52
White	06N06W04AAD1	351037	913839	217							217			
White	06N06W04AAD1	351037	913839	217		2/10/2003	41.00			175.10	176			0.90
White	06N06W04BAA1	351047.21	913909.91	220	70	2/10/2003	26.85			182.03	193.15			11.12
White	06N06W04BAD1	351037	913903	215		4/2/2003	41.00	169.60	176.74	174.00	174	4.40	-2.74	0.00
White	06N06W13DBB1	350918	913552	213		4/2/2003	44.00	170.50	160.00	164.50	169	-1.50	9.00	4.50
White	06N06W18BBC1	350851.33	914151.92	210		2/10/2003	18.70			191.00	191.3			0.30
White	06N06W18BCA1	350835	914150	210		4/2/2003	18.00	188.00	183.50	188.50	192	4.00	8.50	3.50
White	06N06W34AAB1	350623.57	913753.55	213		2/10/2003	60.80			153.14	152.2			-0.94
White	06N07W17DCC1	350822.47	914634.73	217	90						217			
White	06N07W17DCC1	350822.47	914634.73	217	90	3/6/2003	13.40			205.61	203.06			-2.01
White	06N08W13ABA1	350907.73	914824.37	228	60	3/6/2003	8.10			219.80	219.9			0.10
White	06N08W26DDB1	350639.72	914931.17	230	89	2/10/2003	16.90			216.19	217.38			-3.09
White	07N05W01AAA1	351552.59	912858.14	205		2/10/2003	22.55			190.00	182.45			-7.55
White	07N05W26AAA1	351224	913003	200	80						200			
White	07N05W26AAA1	351224	913003	200	80	2/12/2003	21.10				178.9			
White	07N05W32BAB1	351136.63	913406.19	213.7	80	2/10/2003	28.60			186.55	185.94			-1.45
White	07N06W19CAB1	351258.95	914142.28	224	38						224			
White	08N04W06CCB1	352028.21	912846.51	214	74	2/11/2003	18.70			197.98	195.3			-2.68
White	08N05W32CBC1	351615.66	913416.96	199		2/12/2003	1.85			198.40	197.15			-1.25
White	10N04W36CCA1	352613	912250	215		3/6/2003	18.05				196.95			
												Wells/Declines:	1 of 3	4 of 7
												Average Change:	2.30	1.49
														0.56
Woodruff	04N03W03AB1	350020.93	911819.87	185	100	2/19/2003	15.20			172.87	169.8			-3.07
Woodruff	05N01W13CDC1	350244	910331	210	135	2/11/2003	72.70	148.30	145.90	138.40	137.3	-11.00	-8.60	-1.10
Woodruff	05N01W13CDC1	350244	910331	210	135	4/25/2003	73.60				136.4			
Woodruff	05N01W31CCC1	350106	910900	210	140							152.70	-5.90	3.10
Woodruff	05N02W20DCB1	350207.8	911356.19	192		1/3/1900	22.40				178.83	169.6		
Woodruff	05N03W25DDB1	350133	911531	190	120	4/25/2003	13.00	177.70	182.10	177.30	177	-0.70	-5.10	-0.30
Woodruff	05N03W31BAC1	350110	912127	178	120						178			
Woodruff	05N03W35CC2	350021	911735	187							187			
Woodruff	05N03W35CC2	350021	911735	187		2/11/2003	9.25				177.75			
Woodruff	05N04W12DBA1	350426.78	912210.78	186	92						186			
Woodruff	05N04W12DBA1	350426.78	912210.78	186	92						186			
Woodruff	06N01W06BAB1	351048.27	910834.63	202							202			
Woodruff	06N01W33ADB1	350600	910559	216							216			
Woodruff	06N01W33ADB1	350600	910559	216		2/11/2003	65.80			155.12		150.2		-4.92
Woodruff	06N02W19AAA1	350802	911419	225	130	4/25/2003	48.00	182.80	183.00	178.50	177	-5.80	-6.00	-1.50
Woodruff	06N03W15BAB1	350903.06	911807.41	188.79	111	2/12/2003	5.10	183.51	184.46	184.41	183.69	0.18	-0.77	-0.72
Woodruff	06N03W31BCB1	350623	912144	185							185			
Woodruff	06N03W31BCB1	350623	912144	185							185			
Woodruff	06N04W22BDA1	350807	912428	186	120	4/25/2003	5.70	184.50	183.80	186.00	180.3	-4.20	-3.50	-5.70

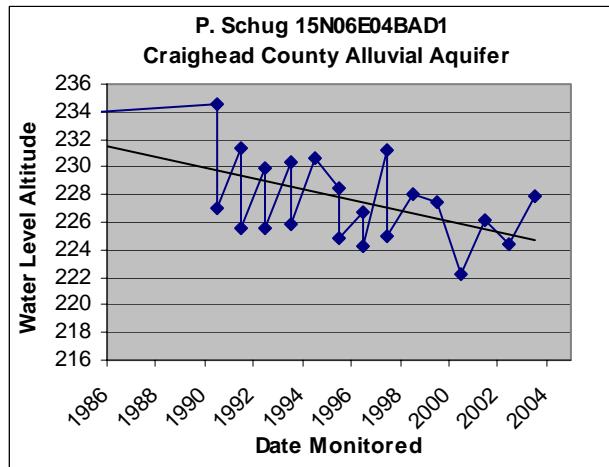
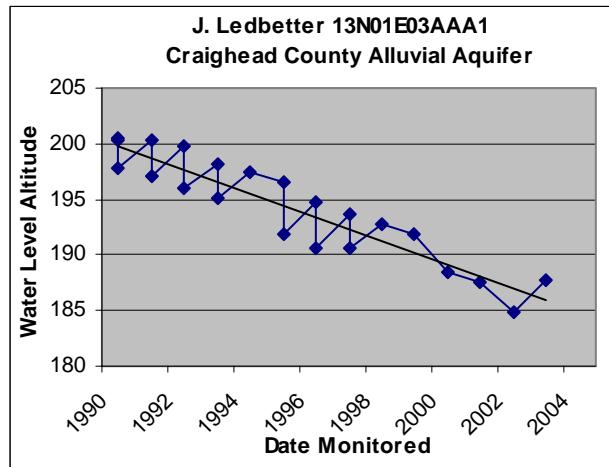
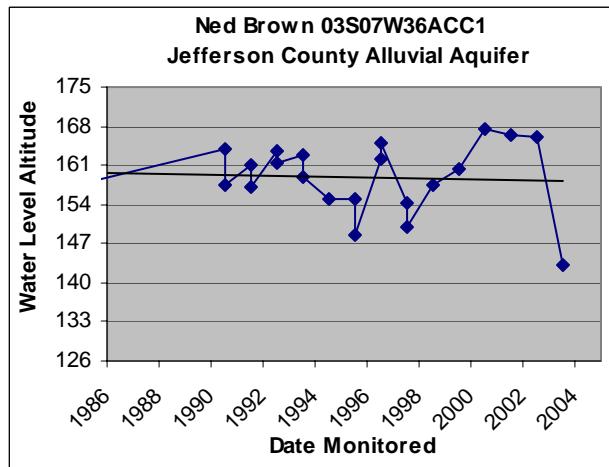
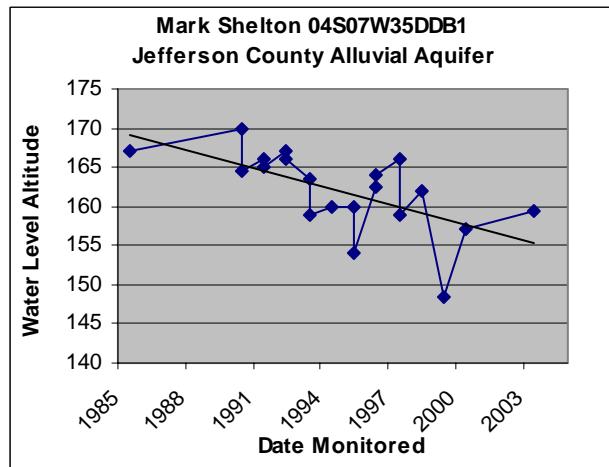
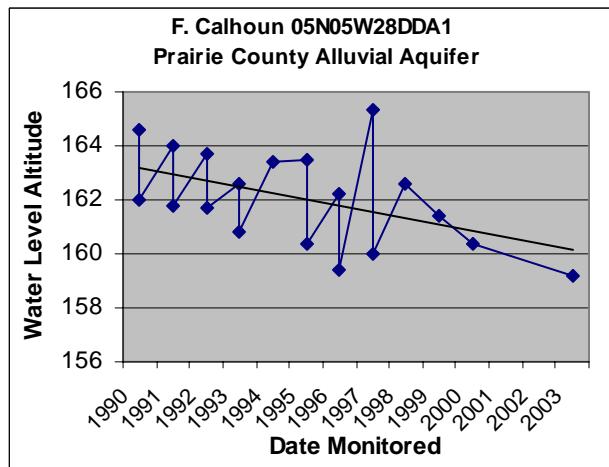
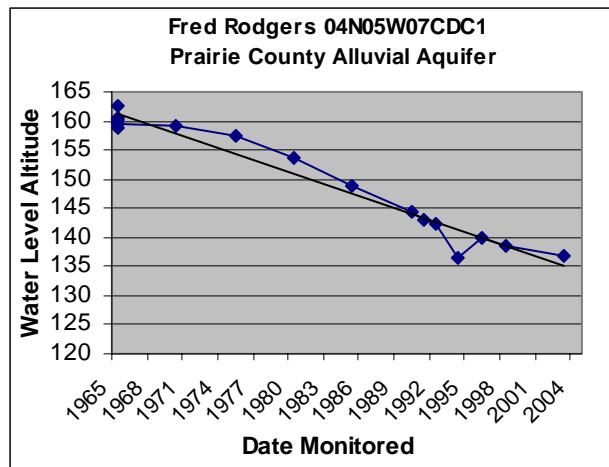
Alluvial Aquifer
 Water level Data
 '93-'98-'02-'03

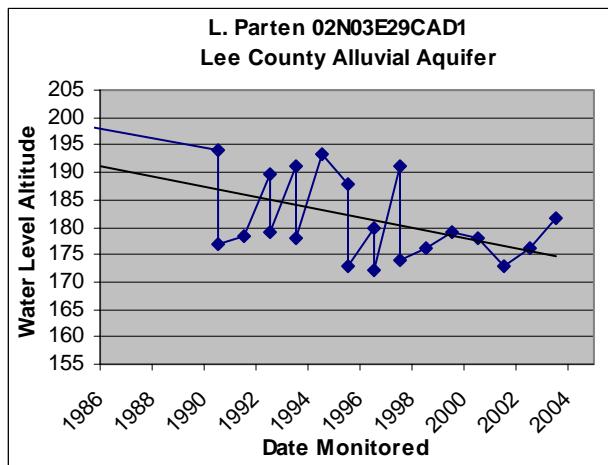
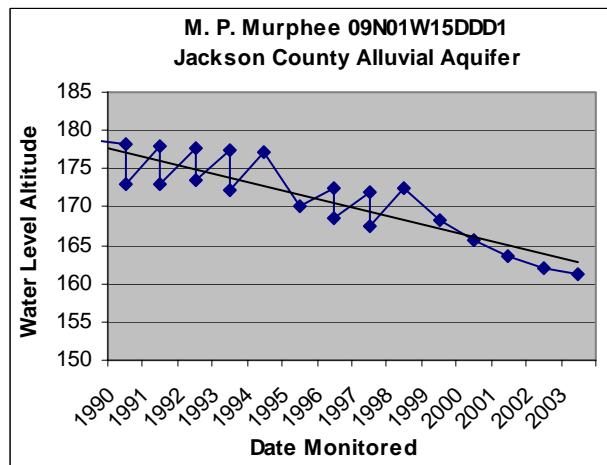
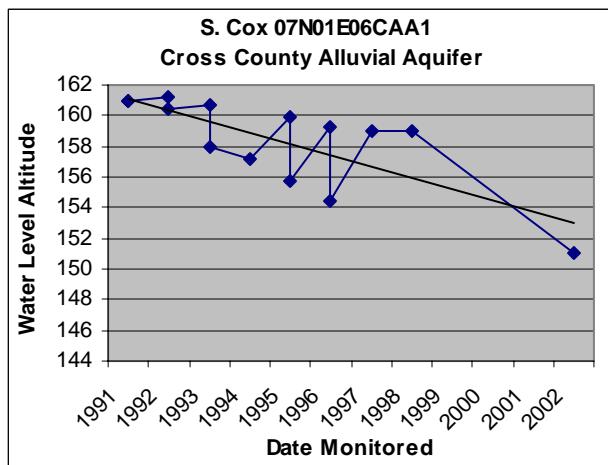
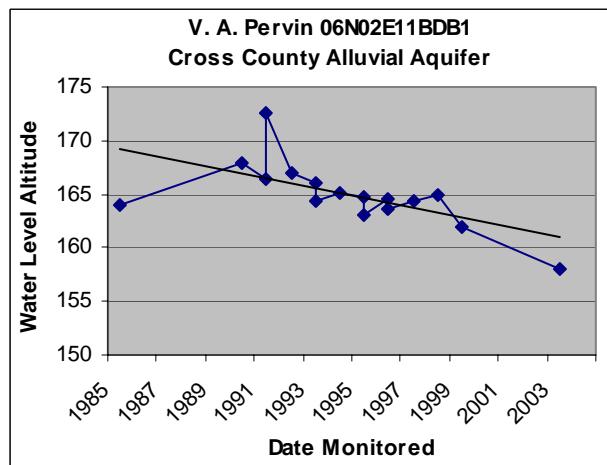
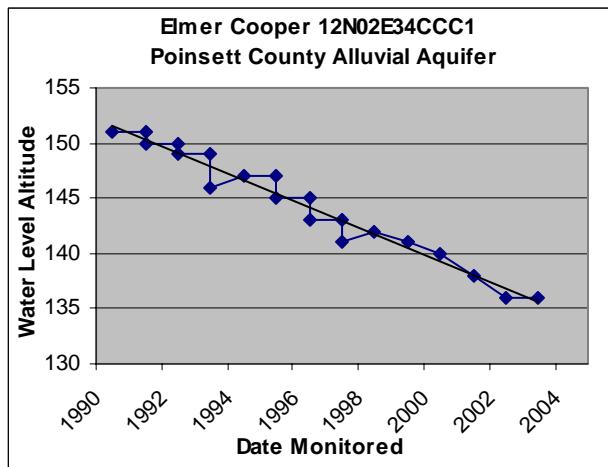
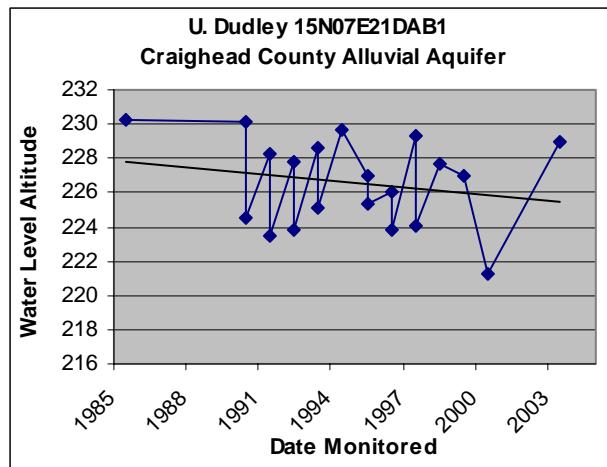
County	Station ID	Latitude	Longitude	LSA	Well	Date	WL	WL Alt.93	WL Alt.98	Alt.02	WL Alt.03	93-03	98-03	02-03	
Woodruff	07N01W04ACB1	351541	910626	225	125	4/25/2003	61.20	173.50	170.00	165.00	163.8	-9.70	-6.20	-1.20	
Woodruff	07N02W16DBB1	351353	911225	206	110	4/25/2003	23.50	185.30	186.20	182.30	182.5	-2.80	-3.70	0.20	
Woodruff	07N03W06BAC1	351607	912109	211	100					211					
Woodruff	07N03W19AAA1	351335	912025.42	202.59	100	2/20/2003	11.10			190.84	191.49			0.65	
Woodruff	07N03W31BBA1	351152	912103	190	120	4/29/2003	8.40	175.90	181.60	180.60	181.6	5.70	0.00	1.00	
Woodruff	08N01W06DDD1	352028	910747	218		2/12/2003	43.70			176.10	174.3			-1.80	
Woodruff	08N01W10AAA1	352018	910431	211	160	4/25/2003	50.00	172.00	163.20	153.80	161	-11.00	-2.20	7.20	
Woodruff	08N02W27DDB1	351711	911107	213	60	4/25/2003	26.50	196.50	191.90	186.00	186.5	-10.00	-5.40	0.50	
Woodruff	08N02W31DDD1	351611	911411	194.55	40	2/12/2003	4.25		192.31	192.04	190.3		-2.01	-1.74	
Woodruff	08N03W31AAD1	351655	912028	212	110					212					
Woodruff	08N03W31AAD1	351655	912028	212	110	2/12/2003	22.90			187.71	189.1			1.39	
Woodruff	08N04W27AAA1	351757	912341	200		2/12/2003	14.60		197.70	196.79	185.4		-12.30	-11.39	
Woodruff	09N03W28ABB1	352310	911845	220	120					220					
Woodruff	09N03W29AAD1	352258	911921	220		2/19/2003	20.50			198.58	199.5			0.92	
Woodruff	09N03W32ACA1	352205	911936	217	120	4/29/2003	16.00		202.00	198.00	201		-1.00	3.00	
												Wells/Declines:	9 of 10	13 of 15	12 of 20
												Average Change:	-5.02	-3.91	-1.18
												Total Wells/Declines:	223 of 260	299 of 375	307 of 603
												85.70%	61.00%	50.90%	
												Aquifer Total Average Change:			-0.47

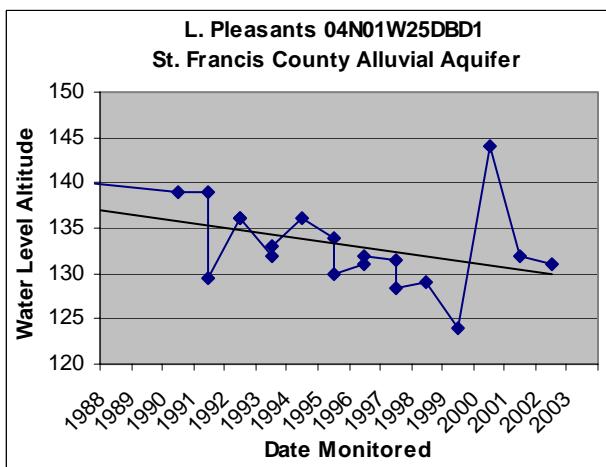
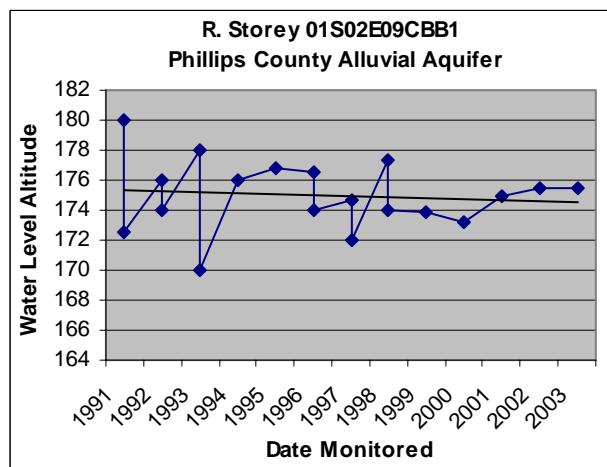
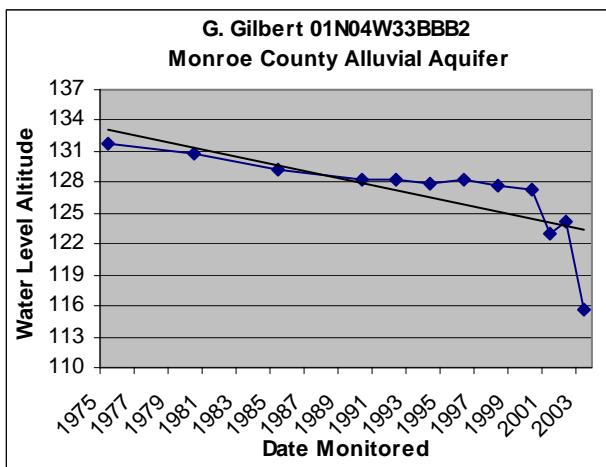
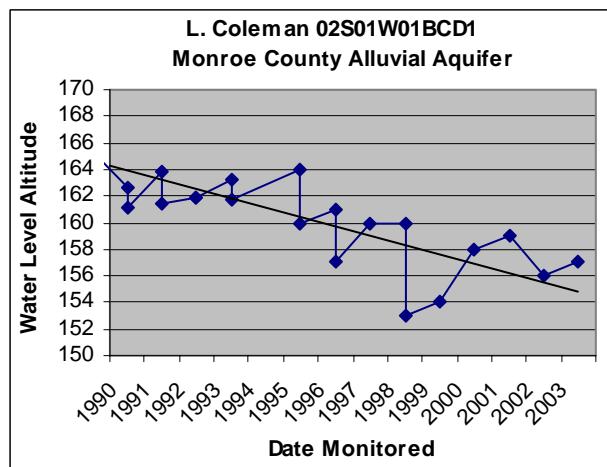
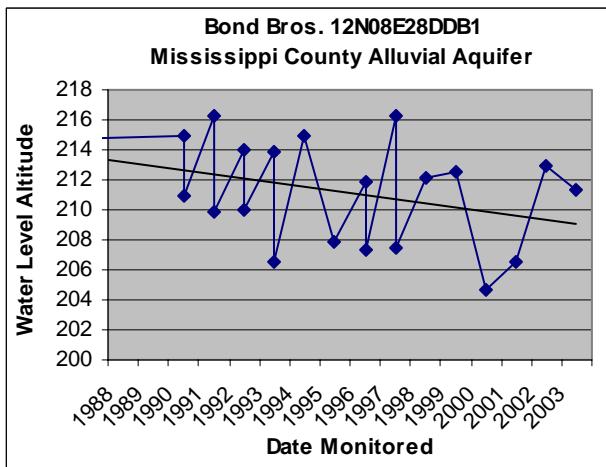
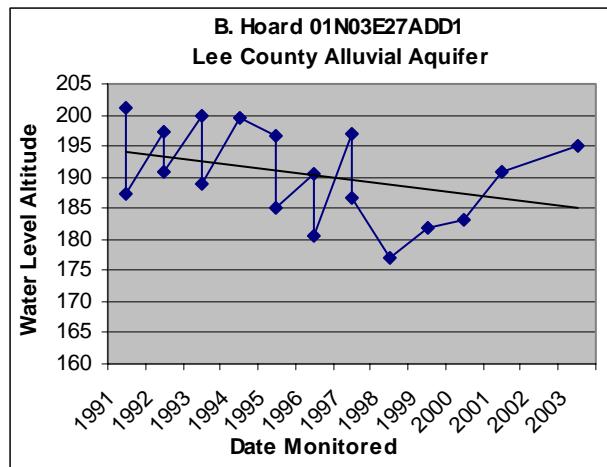
Appendix B

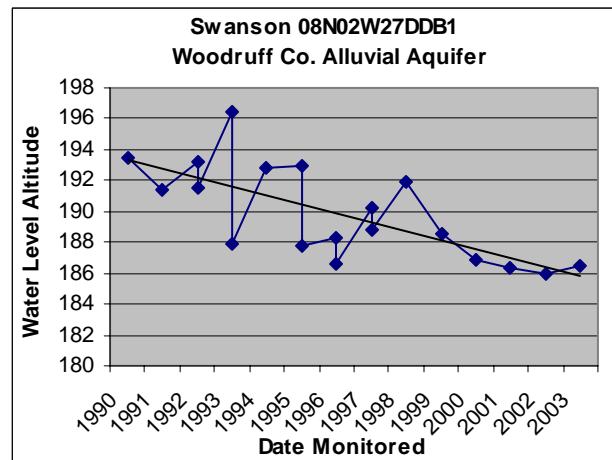
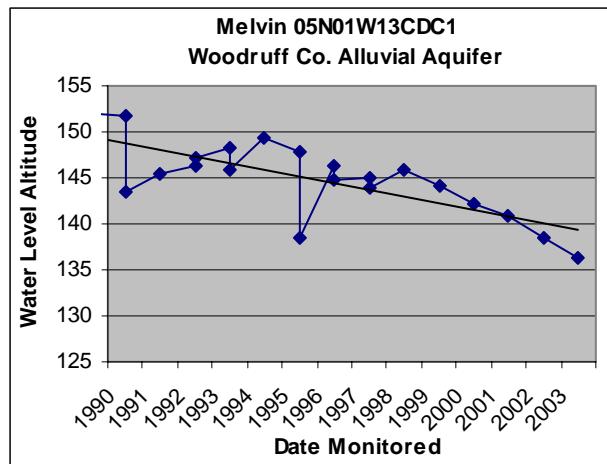
Selected Alluvial Aquifer Well Hydrographs











Appendix C

Sparta/Memphis Aquifer Water Level Monitoring Data

Sparta Aquifer
Data '93-'98-'02-'03

County	Station	Latitude	Longitude	LS Alt	WL Date	WL Measure	WLA	WLA	WLA	WLA	Change	Change	Change
							1993	1998	2002	2003.00	93-03	98-03	02-03
Arkansas	02S04W06CDB1	343311.54	0912849.29	212	4/9/2003	160.87	66.83	58.60	44.80	51.13	-15.70	-7.47	6.33
Arkansas	02S04W23DAA1	343044.22	0912354.53	208	4/8/2003	149.72	81.50	78.80	53.00	58.28	-23.22	-20.52	5.28
Arkansas	02S04W33BBB1	342922.14	0912702.68	205	4/9/2003	171.01	65.42	53.30	36.50	33.99	-31.43	-19.31	-2.51
Arkansas	02S05W16CBC1	343143	0913318	213	4/9/2003	178.88		35.20	37.10	34.12		-1.08	-2.98
Arkansas	02S05W27BBB1	343028.45	0913230.47	216	4/9/2003	180.27		48.55	36.50	35.73		-12.82	-0.77
Arkansas	02S05W34BDA1	342924.58	0913148.02	216	4/9/2003	179.8			29.10	36.20			7.10
Arkansas	02S05W35AAB1	342929.98	0913035.31	216	4/9/2003	174.85		35.20	34.10	41.15		5.95	7.05
Arkansas	03S04W02CCB1	342747.58	0912458.04	202	4/8/2003	162.24	61.11	62.90	42.50	39.76	-21.35	-23.14	-2.74
Arkansas	03S04W26CDA1	342421.03	0912438.30	203	4/8/2003	137.3				65.70			
Arkansas	03S04W33BAA1	342406.95	0912639.02	201	4/7/2003	159.94	67.36			41.06	-26.30		
Arkansas	03S05W02AAB1	342842.19	0913033.71	210	4/9/2003	173.43	60.92			36.57	-24.35		
Arkansas	03S05W13BDC1	342631.15	0913004.57	210	4/9/2003	178.86	52.05	44.55	22.00	31.14	-20.91	-13.41	9.14
Arkansas	03S05W15CBB1	342633.21	0913229.33	206	4/9/2003	171.95	55.05	39.60	25.90	34.05	-21.00	-5.55	8.15
Arkansas	03S05W18CAB1	342629.37	0913524.68	196	4/7/2003	169.14	53.43		24.20	26.86	-26.57		2.66
Arkansas	03S05W28DAB1	342447.16	0913240.25	204	4/9/2003	172.62				31.38			
Arkansas	03S06W30BBD1	342515.54	0914216.15	191	4/7/2003	160.74	55.54			30.26	-25.28		
Arkansas	04S01W04CBD1	342225.42	0910808.42	196	4/8/2003	113.14		91.70	79.20	82.86		-8.84	3.66
Arkansas	04S01W28BAA1	341926.96	0910748.04	190	4/8/2003	106.16	96.90	92.40	83.30	83.84	-13.06	-8.56	0.54
Arkansas	04S04W11BCC1	342156.96	0912501.52	198	4/7/2003	155.5	59.15	50.60	38.00	42.50	-16.65	-8.10	4.50
Arkansas	04S04W19CBB1	342003.73	0912928.89	195	4/7/2003	162.72	59.15			32.28	-26.87		
Arkansas	04S04W22DAA1	342006.89	0912515.15	195	4/7/2003	159.99	64.42	46.78	34.50	35.01	-29.41	-11.77	0.51
Arkansas	04S05W01BAA1	342322.23	0912956.46	196	4/9/2003	194.65			26.80	1.35			-25.45
Arkansas	04S05W05ACC1	342302.67	0913412.84	186	4/7/2003	157.42			22.10	28.58			6.48
Arkansas	04S05W15AAA1	342132.16	0913133.29	201	4/7/2003	166.7		43.44	28.70	34.30		-9.14	5.60
Arkansas	04S05W36DCC1	341752.00	0913003.63	196	4/7/2003	163.18	55.11	43.10	14.00	32.82	-22.29	-10.28	18.82
Arkansas	05S01W17BAA1	341550.68	0910745.34	176	4/8/2003	93.49		90.31		82.51		-7.80	
Arkansas	05S03W04ADB1	341734	0912006	187	4/8/2003	160.84	67.62	59.20	38.90	26.16	-41.46	-33.04	-12.74
Arkansas	05S04W26ACA1	341358	0912435	188	4/7/2003	128.98	67.32		42.00	59.02	-8.30		17.02
Arkansas	05S05W36DAA1	341245.10	0912946.65	180	4/7/2003	140.16	61.74		34.00	39.84	-21.90		5.84
Arkansas	06S02W06ABB1	341227.90	0911620.01	181	4/8/2003	114.76	78.81	72.50	64.80	66.24	-12.57	-6.26	1.44
Arkansas	06S02W17ADA1	341022.67	0911453.14	188	4/8/2003	114.77		84.01	73.30	73.23		-10.78	-0.07
Arkansas	06S02W22CDB1	340904	0911331.06	186	4/8/2003	105.86			73.90	80.14			6.24
Arkansas	06S03W27BAA1	340859.22	0912008.98	181	4/8/2003	119.62		71.80	60.30	61.38		-10.42	1.08
Arkansas	07S02W28ABA1	340339.67	0911411.01	181	4/8/2003	105.64	88.85	83.80	75.90	75.36	-13.49	-8.44	-0.54
Arkansas	07S03W06ABC1	340701.89	0912247.68	185	4/8/2003	131.33	72.10	70.20	53.60	53.67	-18.43	-16.53	0.07
Arkansas	08S02W09BCC1	340031.06	0911447.66	174	4/8/2003	100.22		81.15	74.00	73.78		-7.37	-0.22

Sparta Aquifer
Data '93-'98-'02-'03

								Average Change:		-22.24	-11.24	2.26
								Wells/Declines:		21 of 21	22 of 23	9 of 29
Ashley	15S07W32CDD1	332117.77	0915101.06	190	3/20/2003	137.84	38.41	36.40	55.80	52.16	13.75	15.76
Ashley	17S09W15ACC1	331333.66	0920116.44	100	3/20/2003	17.77				82.23		
Bradley	12S09W31CCB1	333709	0920444	231	4/8/2003	183.54			37.45	47.46		10.01
Bradley	13S09W06ACA1	333647.90	0920437.48	201	3/19/2003	183.67				17.33		
Bradley	13S11W17BCD1	333453.65	0921607.25	250	3/19/2003	192.43	63.88	59.22		57.57	-6.31	-1.65
Bradley	16S12W21CAA1	331839.32	0922052.38	100	3/19/2003	75.29	32.51	28.22		24.71	-7.80	-3.51
								Average Change:		-7.06	-2.58	
								Wells/Declines:		2 of 2	2 of 2	
Calhoun	11S14W12CAC3	334630.25	0922928.17	313	3/14/2003	146	169.92			167.00	-2.92	
Calhoun	13S13W32CDA1	332626.81	0922741.66	208	4/8/2003	168.68	34.72	36.90	33.70	39.32	4.60	2.42
Calhoun	13S15W36CBD1	333227.34	0923532.42	158	3/12/2003	80.51	103.53			77.49	-26.04	
Calhoun	14S13W05BBD1	333206.66	0922801.55	189	3/13/2003	154.13				34.87		
Calhoun	14S13W12CCB1	333040.05	0922403.54	205	3/13/2003	168.45	39.13	29.50	32.80	36.55	-2.58	7.05
Calhoun	14S15W16BAA1	333055.22	0923912.24	146	3/13/2003	97.07	69.57	50.20	49.00	48.93	-20.64	-1.27
Calhoun	15S13W20BDC1	332410.97	0922806.59	115	3/14/2003	34.11		41.10	64.40	80.89		39.79
								Average Change:		-9.52	12.00	6.45
								Wells/Declines:		4 of 5	1 of 4	1 of 4
Cleveland	08S12W13CAA1	340133	0920801	261	3/27/2003	145.57	96.41		114.40	115.43	19.02	
Cleveland	09S11W01DCA1	335729.02	0921133.93	230	5/6/2003	206.18				23.82		
Cleveland	09S11W01DDA1	335729	0921120	266	4/3/2003	207.9	51.03		37.60	58.10	7.07	20.50
Cleveland	10S09W23CDC1	334917.94	0920020.50	220	5/6/2003	161.88	68.03			58.12	-9.91	
Cleveland	10S09W35ACD1	334757.93	0915957.13	219	3/26/2003	154.2				64.80		
Cleveland	10S12W12BDD1	335132.99	0921743.38	220	3/27/2003	117.29	109.72			102.71	-7.01	
Cleveland	11S11W16AAB1	334543.01	0921423.47	303	3/27/2003	205.99				97.01		
								Average Change:		2.29		10.77
								Wells/Declines:		2 of 4		0 of 2
Columbia	15S20W20CCB1	332453.37	0931215.01	372	4/16/2003	217.04		152.30	151.50	154.96		2.66
Columbia	16S19W20ABD1	332008.32	0930520.62	288	3/13/2003	168.5			120.70	119.50		-1.20

Sparta Aquifer
Data '93-'98-'02-'03

Columbia	16S20W08DCC1	332114.08	0931141.34	402	5/13/2003	315.1		72.90	84.25	86.90		14.00	2.65	
Columbia	16S20W18ACD1	332052.93	0931237.40	337	3/11/2003	263.2	69.91			73.80	3.89			
Columbia	16S20W18ACD1	332052.93	0931237.40	337	5/13/2003	264.7				72.30				
Columbia	16S21W14CBB1	332049.37	0931517.28	281	3/11/2003	200.6	62.98		92.70	80.40	17.42		-12.30	
Columbia	16S22W22CCD1	331947.61	0932224.89	340	3/5/2003	132.68	294.82	202.80	200.80	207.32	-87.50	4.52	6.52	
Columbia	17S19W15AAB1	331545	0930318	318	5/13/2003	272.37				45.63				
Columbia	17S19W17ACA1	331538.06	0930536.26	275	3/11/2003	279.95				-4.95				
Columbia	17S19W18CBD1	331516.81	0930655.59	305	3/11/2003	279.49			25.10	28.80	25.51		0.41	-3.29
Columbia	17S19W19BCA1	331432.77	0930704.56	301	3/12/2003	274.59				26.41				
Columbia	17S19W30ABB1	331406.12	0930650.14	248	3/12/2003	221.9	29.72	-26.30	25.50	26.10	-3.62	52.40	0.60	
Columbia	17S20W13CB1	331532.41	0930807.08	312	3/11/2003	318.1			-3.80	-6.10			-2.30	
Columbia	17S20W17CDA1	331519.76	0931200.69	325	3/11/2003	303.03	-1.25	0.50	21.70	22.07	23.32	21.57	0.37	
Columbia	17S20W36ABC1	331307.06	0930754.88	335	3/12/2003	297		17.81	37.50	38.00		20.19	0.50	
Columbia	17S21W01BBC1	331743.07	0931423.65	305	3/12/2003	270.4	-22.32	3.70	46.00	34.60	56.92	30.90	-11.40	
Columbia	17S21W08DCA1	331613.42	0931758.30	298	3/12/2003	211.61				86.39				
Columbia	17S21W11DCC2	331608.55	0931448.61	303	3/11/2003	283.08	-21.79	6.95	18.20	19.92	41.71	12.97	1.72	
Columbia	17S21W17BAA1	331607	0931818	311	3/12/2003	203.32			105.60	107.68			2.08	
Columbia	17S22W21ABD1	331516	0932303	242	3/12/2003	81.35		159.00	161.60	160.65		1.65	-0.95	
Columbia	17S22W22ABC1	331521	0932209	318	3/12/2003	136.48			182.60	181.52			-1.08	
Columbia	17S22W23BBB1	331519	0932136	318	3/12/2003	114.1				203.90				
Columbia	18S20W08CBC1	331114.79	0931227.04	263	3/6/2003	270.16			25.50	-7.16			-32.66	
Columbia	18S20W10CAA1	331054.37	0931015.76	290	3/13/2003	274.98			14.40	15.02			0.62	
Columbia	18S21W01ACC1	331223.06	0931339.45	295	3/6/2003	297.73		3.15	4.40	-2.73		-5.88	-7.13	
Columbia	18S21W17ACD1	331033.97	0931758.51	315	3/7/2003	236.4				78.60				
Columbia	18S22W27DDD1	330834.57	0932158.59	312	3/6/2003	122.98			174.80	189.02			14.22	
Columbia	18S23W26BAC1	330918.71	0932746.52	286	3/5/2003	1.14			262.40	284.86			22.46	
Columbia	19S20W08DAD1	330555.19	0931148.61	320	3/6/2003	254.29		65.20	63.20	65.71		0.51	2.51	
Columbia	19S20W09CBD1	330555.38	0931128.72	332	3/12/2003	266.01				65.99				
Columbia	19S20W34BDD1	330239.09	0931030.67	290	3/6/2003	212.12			74.00	77.88			3.88	
Columbia	19S21W16DBB1	330517	0931725	284	3/5/2003	174.42		109.33	109.10	109.58		0.25	0.48	
Columbia	19S23W10ABD1	330643.92	0932833.33	242	3/5/2003	45.22				196.78				
Columbia	19S23W11CDA2	330609.39	0932744.02	248	3/5/2003	52.65	199.41	193.88	195.80	195.35	-4.06	1.47	-0.45	
Columbia	19S23W11DDB1	330604.93	0932722.12	246	3/5/2003	53.76			193.10	192.24			-0.86	
Columbia	19S23W14BAB2	330555.24	0932752.38	244	3/5/2003	49.99			194.55	194.01			-0.54	
Columbia	20S22W03DCC1	330138.44	0932236.27	214	3/5/2003	105.21				108.79				
Columbia	20S22W11ACD1	330109.20	0932133.20	271	3/5/2003	107.17				163.83				
									Average Change:	6.01	11.26	-0.46		
								Wells/Declines:	3 of 7	1 of 13	12 of 26			

Sparta Aquifer
Data '93-'98-'02-'03

Craighead	13N03E23CDD1	354404.17	0904432.83	248	4/16/2003	86.89		168.18	162.20	161.11		-7.07	-1.09
Craighead	13N04E05DCC1	354642.12	0904115.32	340	4/16/2003	142.3	202.20			197.70	-4.50		
Craighead	14N04E22CBD1	354928.92	0903920.99	256	4/17/2003	55.7			201.90	200.30			-1.60
Craighead	14N04E28DBD1	354836.94	0903953.27	254	4/17/2003	61.17	213.69		196.40	192.83	-20.86		-3.57
Craighead	14N05E28BBB1	354917.12	0903413.55	230	4/16/2003	17.56				212.44			
Craighead	14N05E34ADD1	354747.92	0903413.93	230	4/16/2003	17.73			211.70	212.27			0.57
Craighead	14N05E36CBC1	354750.84	0903100.18	220	4/16/2003	12.1		209.10	207.30	207.90		-1.20	0.60
Craighead	15N03E13ABA1	355614.95	0904306.46	329	4/16/2003	0.69			329.30	328.31			-0.99
Craighead	15N03E31ADA1	355313.63	0904807.26	270	4/16/2003	54.88			216.20	215.12			-1.08
Craighead	15N04E20ADB1	355506.01	0904043.21	438	4/16/2003	120.61			317.15	317.39			0.24
Craighead	15N05E29DBB1	355359.83	0903432.73	258	4/16/2003	23.47			227.80	234.53			6.73
Craighead	15N06E18ACA1	355544.42	0902858.20	230	4/16/2003	18.36		214.16	209.80	211.64		-2.52	1.84
										Average Change:	-12.68	-3.60	0.17
										Wells/Declines:	2 of 2	3 of 3	4 of 9
Crittenden	05N08E11CCA2	350344.68	0901300.21	211	4/14/2003	25.97			185.40	185.03			-0.37
Crittenden	06N07E01DAD2	350958.04	0901738.42	209	4/14/2003	24.16			182.80	184.84			2.04
Crittenden	06N09E08DCC1	350849.72	0900921.78	215	4/14/2003	10.04				204.96			
Crittenden	06N09E23AAB1	350744.84	0900553.13	222	4/14/2003	64.36				157.64			
Crittenden	07N09E14BAC1	351349	0900628	217	4/15/2003	37.33				179.67			
									Average Change:				0.83
									Wells/Declines:				1 of 2
Cross	06N04E06ACA1	351004.29	0904237.72	358	4/8/2003	201.88				156.12			
Cross	07N05E04ADD1	351538.11	0903329.85	209	4/8/2003	35.26	179.32			173.74	-5.58		
Cross	08N02E18BDB1	351908.19	0905538.47	228	5/5/2003	83.79			146.50	144.21			-2.29
Cross	09N01E16CAC1	352405.00	0905950.75	234	4/8/2003	79.65	159.50		147.90	154.35	-5.15		6.45
Cross	09N01E25AAD1	352244.31	0905554.00	227	5/5/2003	84.32			142.70	142.68			-0.02
Cross	09N03E22AAB1	352403.94	0904518.04	277	4/8/2003	122.52				154.48			
Cross	09N03E22AAD1	352403.20	0904511.77	278	4/8/2003	134.5	162.31		155.50	143.50	-18.81		-12.00
Cross	09N03E22ABD1	352403.82	0904518.39	277	4/8/2003	122.52			151.60	154.48			2.88
									Average Change:	-9.85			-1.00
									Wells/Declines:	3 of 3			4 of 7
Dallas	09S14W01BDC1	335753.63	0922918.78	265	3/26/2003	78.8				186.20			

Sparta Aquifer
Data '93-'98-'02-'03

Dallas	09S16W19CAA1	335605.48	0924701.17	260	3/25/2003	6.51			254.70	253.49			-1.21
Dallas	10S13W34ACA2	334829.46	0922457.61	272	3/25/2003	150.74			121.40	121.26			-0.14
Dallas	10S14W27CDB1	334907.60	0923137.99	270	3/25/2003	35.03			241.50	234.97			-6.53
Dallas	10S15W18BCC1	335119.53	0924120.08	328	3/25/2003	75.39				252.61			
									Average Change:				-2.63
									Wells/Declines:				3 of 3
Desha	09S02W26AAC1	335346.00	0911520.82	153	3/25/2003	69.98	91.25	87.40	80.40	83.02	-8.23	-4.38	2.62
Desha	09S04W28DDD1	335309.60	0913006.71	165	3/25/2003	112.42	63.85	60.20	52.30	52.58	-11.27	-7.62	0.28
Desha	10S02W26CCC2	334750.23	0911623.99	148	3/25/2003	72.14	84.50	82.00		75.86	-8.64	-6.14	
Desha	10S04W11CBC1	335034.41	0912905.14	161	3/25/2003	102.45				58.55			
Desha	11S02W03CCA1	334615.78	0911711.03	139	3/25/2003	70.32	78.87	80.25	74.00	68.68	-10.19	-11.57	-5.32
Desha	12S03W26CBB1	333748.60	0912259.18	138	3/25/2003	96.12			36.00	41.88			5.88
Desha	12S03W34DAD1	333643.44	0912305.04	147	3/25/2003	78.45	73.23	71.45	67.50	68.55	-4.68	-2.90	1.05
									Average Change:		-8.60	-6.52	0.90
									Wells/Declines:		5 of 5	5 of 5	1 of 5
Drew	11S04W02ACA2	334631.87	0912826.56	153	3/26/2003	92.38			54.90	60.62			5.72
Drew	11S04W25CB2	334249.46	0912706.98	148	3/26/2003	84.28				63.72			
Drew	11S06W11DBC1	334606.63	0914122.37	203	3/26/2003	149.95				53.05			
Drew	12S06W30BBD1	333807.15	0914543.08	302	3/26/2003	222.63				79.37			
Drew	12S06W32DAD1	333649.09	0914401.96	227	3/26/2003	168.02	51.52	55.00	46.50	58.98	7.46	3.98	12.48
Drew	13S05W36ACB1	333150.88	0913407.59	169	3/26/2003	89.13	80.58	79.40		79.87	-0.71	0.47	
Drew	15S04W12DDA1	332429.38	0912723.69	125	3/26/2003	62.02		67.20	64.10	62.98		-4.22	-1.12
									Average Change:		3.38	0.08	5.69
									Wells/Declines:		1 of 2	1 of 3	1 of 3
Grant	03S13W12AAA1	342846	0922106	361	4/1/2003	131.45				229.55			
Grant	03S15W26DAA1	342600.52	0923447.01	337	4/2/2003	10.45				326.55			
Grant	04S14W14DCD1	342201	0922931	257	4/2/2003	83.05				173.95			
Grant	05S13W03CDA4	341839	0922402	281	4/2/2003	111.9	172.42			169.10	-3.32		
Grant	05S13W03DBC1	341845	0922359	260	4/2/2003		175.20			175.23	0.03		
Grant	05S13W07ADB1	341812	0922653	258	4/2/2003	60.22				197.78			
Grant	05S13W30AAA1	341550.10	0922649.93	330	4/2/2003	120.65				209.35			
Grant	05S14W06DCC1	341842.50	0923326.69	293	4/2/2003	87.62	204.06		202.00	205.38	1.32		3.38
Grant	05S15W05ABD1	341923.78	0923826.87	236	4/2/2003	19.03				216.97			

Sparta Aquifer
Data '93-'98-'02-'03

Grant	06S11W05ACA1	341341	0921414	280	4/3/2003	210.47				69.53			
Grant	06S15W26ACA1	341021.99	0923537.59	280	4/2/2003	66.34	212.76			213.66	0.90		
Grant	07S12W21BDB1	340558.11	0921952.70	223	4/1/2003	2.17				220.83			
									Average Change:	-0.27			
									Wells/Declines:	1 of 4			
Hot Spring	05S16W35ACA1	341459.51	0924151.12	342	3/24/2003	35.67			307.50	306.33			-1.17
Jefferson	03S08W19BAD1	342623.76	0915443.67	217	4/22/2003	169.65		62.80	45.10	47.35		-15.45	2.25
Jefferson	03S08W19BBD1	342628.36	0915504.54	215	4/23/2003	167.52		59.30	41.40	47.48		-11.82	6.08
Jefferson	03S08W19BDB1	342618.71	0915455.22	215	4/23/2003	167.55		60.10	45.70	47.45		-12.65	1.75
Jefferson	03S09W23BCA1	342626	0915713	222	4/22/2003	178.27			42.00	43.73			1.73
Jefferson	03S10W14CAD1	342659.22	0920330.26	221	4/23/2003	116.83				104.17			
Jefferson	03S10W27AAD1	342502.05	0920433.81	222	4/22/2003	125.96		100.80		96.04		-4.76	
Jefferson	03S11W22ABC1	342650.81	0921058.27	310	3/17/2003	175.34	144.08			134.66	-9.42		
Jefferson	04S07W17BCC1	342139.61	0914741.85	200	4/4/2003	171.33	33.37		15.90	28.67	-4.70		12.77
Jefferson	04S08W35BBD1	341909.06	0915056.13	200	4/4/2003	211.75	3.16	-7.44		-11.75	-14.91	-4.31	
Jefferson	04S09W11BAA1	342309.29	0915702.22	210	4/4/2003	134.17				75.83			
Jefferson	04S09W32BDA1	341924.77	0920017.46	209	4/22/2003	124.66				84.34			
Jefferson	04S10W17BDA1	342212.14	0920645.60	265	4/22/2003	191.57			59.80	73.43			13.63
Jefferson	04S10W22BDD1	342109.41	0920441.93	244	4/22/2003	203.68		61.96	36.50	40.56		-21.40	4.06
Jefferson	04S10W29ADB1	342025	0920623	268	4/22/2003	218.07		68.75	52.25	49.48		-19.27	-2.77
Jefferson	04S11W14BAD1	342219.74	0921000.07	400	3/24/2003	308.55		95.00	90.20	91.45		-3.55	1.25
Jefferson	05S08W30ADB1	341452.32	0915440.20	221	4/23/2003	295.19	-52.44			-74.19	-21.75		
Jefferson	05S08W30CBA1	341446.21	0915526.54	207	4/23/2003	288.87	-60.63	-70.70		-81.41	-20.78	-10.71	
Jefferson	05S09W19BAA3	341609.48	0920130.68	226	5/6/2003	255.57				-29.57			
Jefferson	05S09W24DBD1	341529.68	0915555.60	208	4/23/2003	272.52		-57.90	-69.80	-64.35		-6.45	5.45
Jefferson	05S09W31DDC1	341336.69	0920109.42	227	4/23/2003	286.14				-59.14			
Jefferson	05S09W35AAB1	341420.05	0915653.10	205	4/23/2003	273.45	-56.80	-73.90	-84.20	-68.45	-11.65	5.45	15.75
Jefferson	05S10W11ACA1	341741.24	0920321.58	235	4/22/2003	195.96				39.04			
Jefferson	05S10W16BAD1	341700.48	0920548.64	277	3/17/2003	244.92		43.10	31.40	32.08		-11.02	0.68
Jefferson	05S10W16DBB1	341634.59	0920542.79	315	3/17/2003	292.4			15.60	22.60			7.00
Jefferson	05S10W16DBD1	341634	0920534	300	3/24/2003	279.75	31.58		13.40	20.25	-11.33		6.85
Jefferson	06S08W16CCC1	341143.07	0915517.06	202	4/23/2003	248.9	-34.38	-44.28		-46.48	-12.10	-2.20	
Jefferson	06S08W16CCC1	341143.07	0915517.06	202	5/30/2003	253.7		-42.58		-51.28		-8.70	
Jefferson	06S08W16CCC1	341143.07	0915517.06	202	3/31/2003	254.6				-52.18			
Jefferson	06S08W16CCC1	341143.07	0915517.06	202	3/5/2003	256.4	-35.03	-42.78		-53.98	-18.95	-11.20	

Sparta Aquifer
Data '93-'98-'02-'03

Jefferson	06S08W16CCC1	341143.07	0915517.06	202	2/3/2003	258.6	-35.63	-43.18		-56.18	-20.55	-13.00	
Jefferson	06S08W16CCC1	341143.07	0915517.06	202	1/1/2003	260	-35.78	-44.28		-57.58	-21.80	-13.30	
Jefferson	06S08W25ADC1	341024.86	0915116.18	203	4/23/2003	217.39		-10.02	-24.30	-13.91		-3.89	10.39
Jefferson	06S09W17CAD1	341158.70	0920206.91	233	4/23/2003	280.07				-47.07			
Jefferson	06S09W17CCA1	341151.82	0920220.85	234	3/17/2003	269.28	-20.10			-34.94	-14.84		
Jefferson	06S10W23ACA2	341123.09	0920503.93	235	4/23/2003	227.68				7.32			
Jefferson	06S10W23ACD1	341115.54	0920507.54	232	4/23/2003	226.16		14.00	7.00	5.84		-8.16	-1.16
Jefferson	06S10W23DBA1	341104.56	0920506.17	230	4/23/2003	239.96	17.75		-12.00	-9.96	-27.71		2.04
Jefferson	07S07W24BAB1	340632.68	0914522.99	188	4/23/2003	161.69		35.55		26.31		-9.24	
Jefferson	07S10W24CAC1	340548.70	0920420.81	311	4/23/2003	302.05	216.33	27.60		8.95		-18.65	
									Average Change:	-16.19	-9.73	5.16	
									Wells/Declines:	13 of 13	20 of 21	2 of 17	
Lee	01N04E09DCC4	344208	0904120	204	4/9/2003	59.28				144.72			
Lee	02N01E10CAD1	344743.36	0905924.74	201	4/9/2003	51.1				149.90			
Lee	03N03E28CDB1	345005.93	0904748.84	207	4/9/2003	61.11	158.74			145.89	-12.85		
Lincoln	07S07W30CDC1	340443.93	0915042.86	208	3/27/2003	179.23			27.30	28.77			1.47
Lincoln	08S04W22AAA1	340104.86	0912752.79	167	3/27/2003	117.93				49.07			
Lincoln	08S05W03BAA2	340309.54	0913453.58	180	3/27/2003	145.14			37.30	34.86			-2.44
Lincoln	08S05W35ACC1	335907	0913333	165	3/27/2003	136.92	74.68		42.00	28.08	-46.60		-13.92
Lincoln	08S06W31DCC1	335849.71	0914357.82	181	3/27/2003	131.32			51.60	49.68			-1.92
Lincoln	08S08W35DCB1	335850.57	0915217.37	292	3/27/2003	210.41				81.59			
Lincoln	09S07W07DAD1	335633.89	0915128.31	289	3/27/2003	268.2	41.35		25.00	20.80	-20.55		-4.20
									Average Change:	-33.58		-4.20	
									Wells/Declines:	3 of 3		4 of 5	
Lonoke	01N07W03BCC1	344425.34	0914503.28	223	3/3/2003	127.59	109.62	104.36		95.41	-14.21	-8.95	
Lonoke	01S08W02DBD1	343854.72	0914959.73	210	4/10/2003	96.65				113.35			
Lonoke	02N07W06ACD1	344939.05	0914737.03	241	4/10/2003	122.12				118.88			
Lonoke	02N07W09AAA1	344906.42	0914500.30	232	4/10/2003	98.64		139.75	134.10	133.36		-6.39	-0.74
Lonoke	02N07W22DBA1	344651.49	0914425.68	227	3/3/2003	126.17		108.75	102.40	100.83		-7.92	-1.57
Lonoke	02N07W23BAA1	344719.62	0914328.02	236	4/10/2003	139.16		95.64		96.84		1.20	
Lonoke	02N07W24DAC1	344650.23	0914209.37	231	3/3/2003	143.96			84.10	87.04			2.94
Lonoke	02N07W32DDD1	344453.26	0914618.97	226	3/3/2003	127.33		107.11	100.50	98.67		-8.44	-1.83
Lonoke	02S08W16BDA1	343227.68	0915232.49	216	4/11/2003	121.07			89.90	94.93			5.03

Sparta Aquifer
Data '93-'98-'02-'03

Lonoke	02S09W15BBB2	343246.5	0915825.0	226	4/11/2003	72.99				153.01				
Lonoke	03N07W03CAA1	345444.90	0914426.30	235	4/10/2003	79.11		161.40	135.00	155.89		-5.51	20.89	
Lonoke	03N07W23CCC1	345144.19	0914349.67	228	4/10/2003	86.21				141.79				
Lonoke	03N08W11ACD1	345402.52	0914934.74	248	1/8/2003	87.98				160.02				
Lonoke	03N08W11ACD1	345402.52	0914934.74	248	4/1/2003	88.65				159.35				
Lonoke	03N08W22DAD1	345205.16	0915023.62	233	4/1/2003	86.56				146.44				
Lonoke	03N08W22DAD1	345205.16	0915023.62	233	1/8/2003	87.56				145.44				
Lonoke	03N08W22DAD2	345204.58	0915023.87	233	4/1/2003	93.37				139.63				
Lonoke	03N08W22DAD2	345204.58	0915023.87	233	1/8/2003	94.29				138.71				
Lonoke	03N08W22DDD2	345152.18	0915025.08	235	3/31/2003	95		144.20	144.20	140.00		-4.20	-4.20	
Lonoke	03N08W22DDD2	345152.18	0915025.08	235	1/7/2003	96.79				138.21				
										Average Change:		-5.74	2.93	
										Wells/Declines:		6 of 7	4 of 7	
Mississippi	11N09E26AAD3	353302.32	0900523.06	240	5/15/2003	21.75				218.25				
Mississippi	11N09E26ABA2	353312	0901203	236	5/15/2003	17.73				218.27				
Monroe	01N03W14CCB1	344143.93	0911801.12	172	4/7/2003	71.29		110.80	103.30	100.71		-10.09	-2.59	
Monroe	03N01W33CDD1	345446.34	0910635.08	210	4/7/2003	67.51				142.49				
Monroe	03N02W26DAB1	345043	0911026	192	4/7/2003	45.87			144.40	146.13			1.73	
Monroe	04N02W28DDD4	345535	0911221	192	4/7/2003	30.06	165.88		161.70	161.94	-3.94		0.24	
Monroe	04N02W30BAC1	345617.03	0911503.95	180	4/7/2003	15.16	166.58	169.90	170.90	164.84	-1.74	-5.06	-6.06	
Monroe	04N02W30BAD1	345617.24	0911514.62	182	4/7/2003	9.09				172.91				
										Average Change:		-2.84	-7.58	-1.67
										Wells/Declines:		2 of 2	2 of 2	2 of 4
Nevada	14S20W29BCA1	332931.28	0931151.57	369	3/11/2003	8.15				360.85				
Nevada	14S21W04CCB1	333251.22	0931708.33	360	3/11/2003	56.45				303.55				
Ouachita	11S15W27ABD1	334440.87	0923725.58	200	3/13/2003	67.03			130.80	132.97			2.17	
Ouachita	11S17W14CAC1	334631.35	0924927.46	146	3/14/2003	19.59			127.60	126.41			-1.19	
Ouachita	11S17W36CCA1	334341.11	0924834.21	133	3/14/2003	7.43			127.60	125.57			-2.03	
Ouachita	11S18W20AAA1	334614.25	0925759.33	301	3/13/2003	43.8			258.50	257.20			-1.30	
Ouachita	12S15W09BBA1	334223.32	0923922.44	213	3/13/2003	68.75		137.12		144.25		7.13		
Ouachita	12S16W25BDA1	333942	0924252	137	5/12/2003	33.1			82.40	103.90			21.50	

Sparta Aquifer
Data '93-'98-'02-'03

Ouachita	12S16W26ABD1	333945.55	0924304.12	134	5/12/2003	42.32		92.72	97.20	91.68		-1.04	-5.52
Ouachita	12S18W25CAB1	333937.19	0925441.87	187	3/13/2003	77.29			116.50	109.71			-6.79
Ouachita	12S19W09BAB1	334251.46	0930351.94	290	3/13/2003	10.42		270.30	279.50	279.58		9.28	0.08
Ouachita	12S19W14AAA1	334143.44	0930104.54	237	3/13/2003	4.36		232.30	233.80	232.64		0.34	-1.16
Ouachita	12S19W35BDD1	333901.13	0930145.97	350	3/13/2003	154.95			196.10	195.05			-1.05
Ouachita	13S16W28ADD1	333416.22	0924450.63	106	3/13/2003	24.35	85.41		79.90	81.65	-3.76		1.75
Ouachita	13S19W28BCD1	333433.86	0930417.81	230	3/12/2003	33.19		190.90	193.70	196.81		5.91	3.11
Ouachita	14S16W32BDB1	332815.62	0924639.52	231	3/12/2003	17.2			217.40	213.80			-3.60
Ouachita	14S17W05CAD1	333238.01	0925254.64	157	3/12/2003	36.25		121.20	121.60	120.75		-0.45	-0.85
Ouachita	14S17W19DBB1	333002.20	0925345.44	259	3/12/2003	10.6			238.80	248.40			9.60
Ouachita	14S17W32CAD1	332803.41	0925251.18	220	3/12/2003	82.3		133.33	137.30	137.70		4.37	0.40
Ouachita	14S18W27BDC1	332917.60	0925703.97	309	3/12/2003	41.99			248.10	267.01			18.91
Ouachita	14S19W29ABB1	332941.45	0930513.43	280	3/12/2003	85.73	194.09	194.20	192.30	194.27	0.18	0.07	1.97
Ouachita	15S15W32DBB2	332233.72	0924027.13	119	3/12/2003	174.58			-57.50	-55.58			1.92
Ouachita	15S18W36ADD1	332310.75	0925436.06	160	3/11/2003	95.1			64.40	64.90			0.50
Ouachita	15S19W10DCC1	332618.38	0930318.37	210	3/13/2003	70.85	140.06	146.20	141.50	139.15	-0.91	-7.05	-2.35
Ouachita	15S19W21CDD2	332438.02	0930431.90	280	3/13/2003	194.69		84.90		85.31		0.41	
Phillips	01S02E32DDC1	343324.32	0905455.41	211	5/10/2003	80.73	136.68		130.30	130.27	-6.41		-0.03
Phillips	02S02E01ADC1	343323.48	0905056.27	176	5/5/2003	37.88			137.40	138.12			0.72
Phillips	02S04E02DBA1	343242.87	0903906.98	250	4/10/2003	113.3	131.47		149.90	136.70	5.23		-13.20
Phillips	02S05E16BCB1	343108.32	0903525.64	190	4/10/2003	32.02	152.95		158.10	157.98	5.03		-0.12
Phillips	02S05E29CCC1	342850.81	0903635.44	179	4/10/2003	33.81	160.20		152.80	145.19	-15.01		-7.61
Phillips	03S03E30DAA1	342402.88	0904914.59	172	4/10/2003	44.69			129.10	127.31			-1.79
Phillips	03S05E05BAB1	342755.10	0903621.23	180	4/10/2003	56.35				123.65			
Phillips	04S02E25CCC1	341824.20	0905121.49	166	5/5/2003	36.37	131.96		127.30	129.63	-2.33		2.33
Poinsett	10N01E12BDC1	353026.35	0905629.57	234	4/18/2003	94.51			133.80	139.49			5.69
Poinsett	10N01E15DBB1	352930.54	0905825.14	232	4/21/2003	93.82	150.98	150.55	139.80	138.18	-12.80	-12.37	-1.62
Poinsett	10N01E33ABA1	352724.90	0905924.05	221	4/18/2003	74.66			145.20	146.34			1.14
Poinsett	10N03E02BCD1	353139.29	0904446.60	251	4/18/2003	109.75		147.60	136.00	141.25		-6.35	5.25
Poinsett	10N03E23CAC1	352849.63	0904432.29	258	4/18/2003	111.13		152.10		146.87		-5.23	
Poinsett	11N02E16CCC1	353448.21	0905321.22	243	4/18/2003	104.24			146.63	138.76			-7.87

Sparta Aquifer
Data '93-'98-'02-'03

Poinsett	11N03E25BDD1	353324.54	0904323.38	269	4/18/2003	119.68	151.88		144.60	149.32	-2.56		4.72
Poinsett	12N02E12DDC1	354104.17	0904928.15	248	4/18/2003	109.57		150.50	143.80	138.43		-12.07	-5.37
Poinsett	12N03E12BBB1	354137.44	0904340.09	246	4/18/2003	93.76			142.70	152.24			9.54
Poinsett	12N03E35BCC1	353744.78	0904455.70	244	4/18/2003	98.58				145.42			
Poinsett	12N03E35DDA1	353727.35	0904353.06	247	4/18/2003	108.5		152.68	146.50	138.50		-14.18	-8.00
										Average Change:	-7.68	-10.04	0.39
										Wells/Declines:	2 of 2	5 of 5	4 of 9
Prairie	01N05W19CDC1	344113.10	0913505.27	212	4/9/2003	141			75.20	71.00			-4.20
Prairie	01N06W02ABB1	344440	0913658	223	4/10/2003	117.54	120.81	113.70	101.10	105.46	-15.35	-8.24	4.36
Prairie	01N06W34CBB1	343943.01	0913846.17	226	4/9/2003	157.19			63.90	68.81			4.91
Prairie	01S05W06BCB1	343903.98	0913531.63	220	4/9/2003	153.77	84.85	76.00	60.30	66.23	-18.62	-9.77	5.93
Prairie	01S05W20ABB1	343639.91	0913351.89	220	4/9/2003	155.61		57.68	53.00	64.39		6.71	11.39
Prairie	01S06W01BDD2	343859.48	0913612.77	226	4/10/2003	168.59			61.20	57.41			-3.79
Prairie	01S06W11DBD1	343748.99	0913654.24	226	4/9/2003	169.4	82.77	67.25		56.60	-26.17	-10.65	
Prairie	02N04W19ACB1	344649.11	0912801.56	211	4/10/2003	89.77				121.23			
Prairie	02N06W19AAB1	344718.24	0914049.95	236	4/10/2003	142.97		104.50	93.20	93.03		-11.47	-0.17
Prairie	02N06W20BCB1	344706.57	0914032.97	236	4/10/2003	139.81	112.16	97.90	96.80	96.19	-15.97	-1.71	-0.61
Prairie	02N06W21DAD1	344644.15	0913829.47	232	4/10/2003	121.02	121.00	118.10	106.40	110.98	-10.02	-7.12	4.58
Prairie	02N06W22BDD1	344653.66	0913800.68	233	4/10/2003	127.91	125.06		114.70	105.09	-19.97		-9.61
Prairie	03N05W03ADA2	345451.65	0913042.51	205	4/10/2003	59.14		152.60		145.86		-6.74	
Prairie	03N05W20CCC1	345144.72	0913356.35	213	4/10/2003	70.1			142.60	142.90			0.30
Prairie	03N06W20CDD1	345140.24	0914003.93	225	4/10/2003	84.2		145.60	154.30	140.80		-4.80	-13.50
										Average Change:	-17.68	-5.98	-0.03
										Wells/Declines:	6 of 6	8 of 9	6 of 12
Pulaski	02S11W29AAA1	343115.07	0921225.14	245	5/8/2003	40.23				204.77			
St. Francis	04N04E18BAB1	345743.38	0904319.00	220	4/9/2003	64.25		156.30	151.80	155.75		-0.55	3.95
Union	16S14W15CAB1	331944.03	0923218.09	94	3/12/2003	153.21	-48.21	-55.10	-54.10	-59.21	-11.00	-4.11	-5.11
Union	16S15W20DAA1	331859.92	0923957.97	190	3/4/2003	275.89	-85.00		-94.10	-85.89	-0.89		8.21
Union	16S15W31ACC1	331717.09	0924128.90	168	3/4/2003	301.68			-138.00	-133.68			4.32
Union	16S16W02ABC1	332205	0924330	116	3/4/2003	170.9	-49.66	-60.40	-56.50	-54.90	-5.24	5.50	1.60
Union	16S18W34ABC2	331805	0925709	248	3/6/2003	206.35		52.00	40.00	41.65	-10.35		1.65

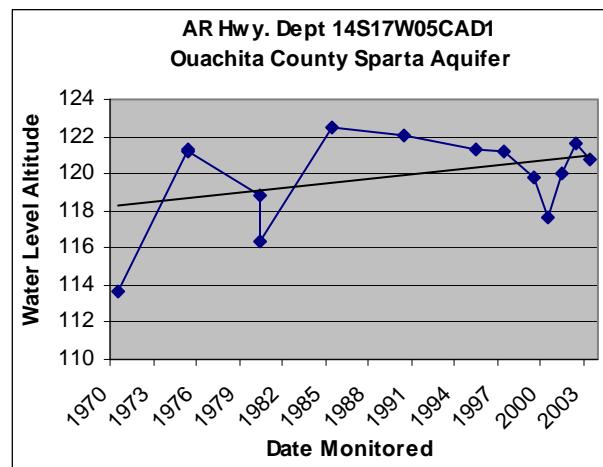
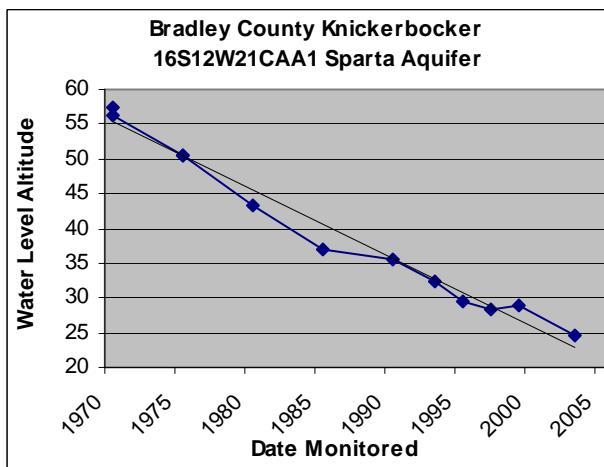
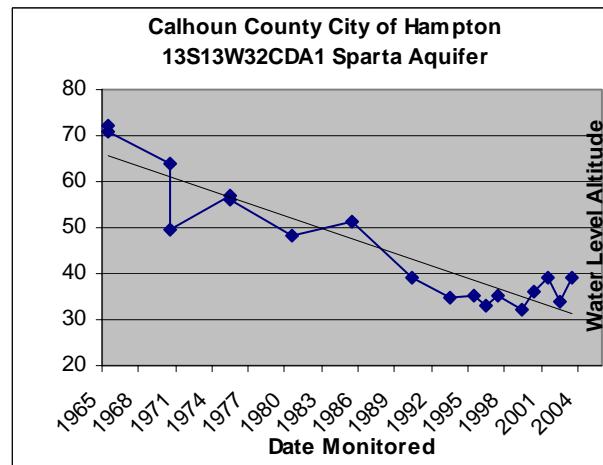
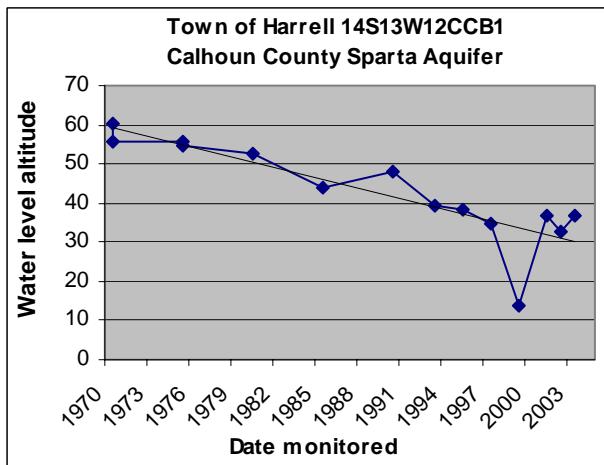
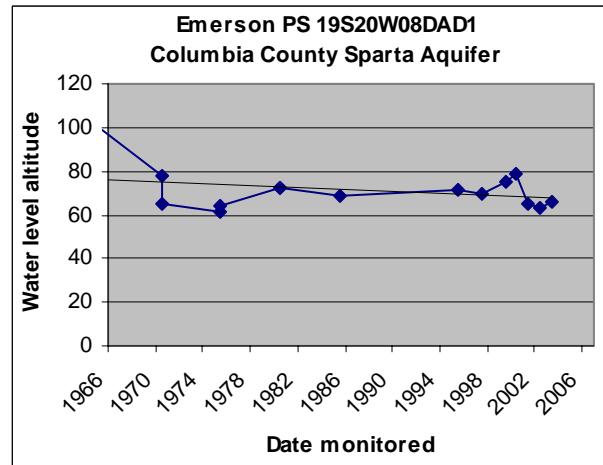
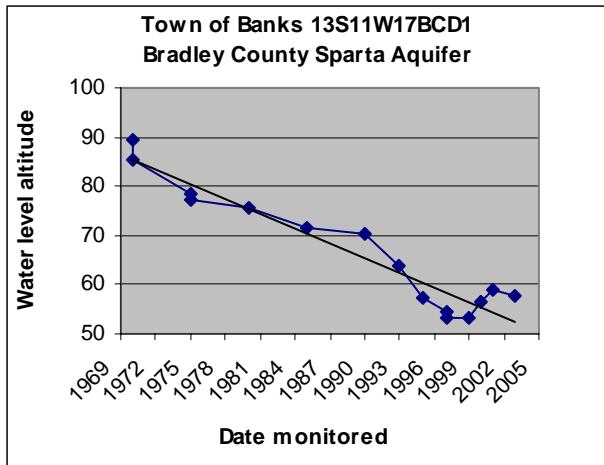
Sparta Aquifer
Data '93-'98-'02-'03

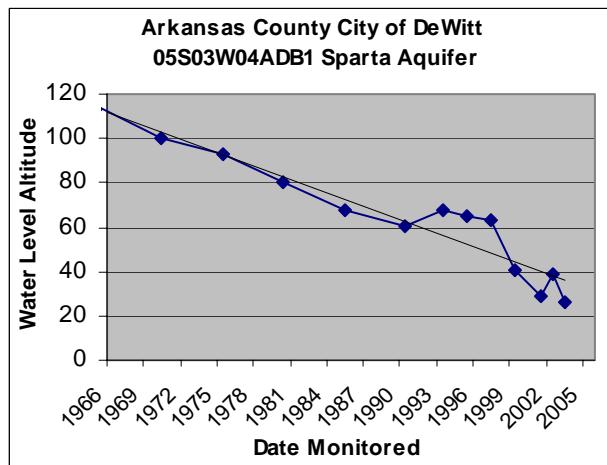
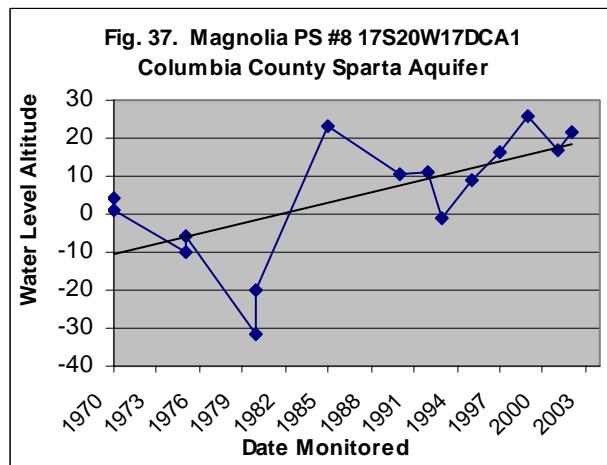
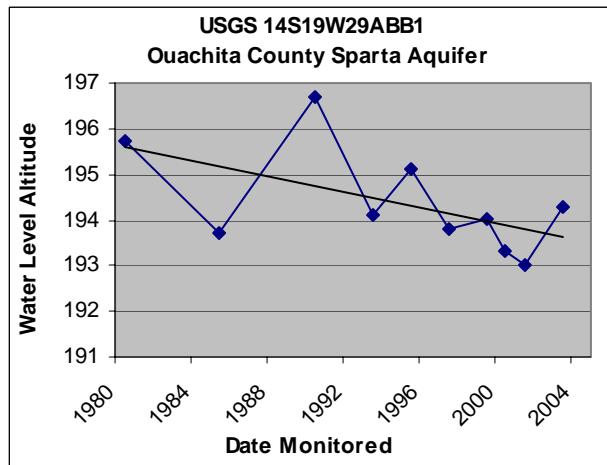
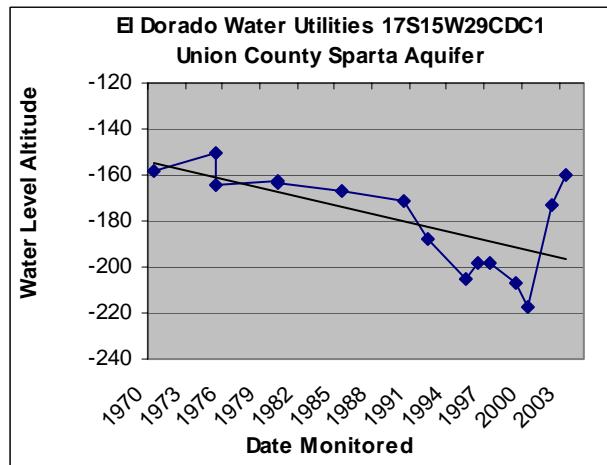
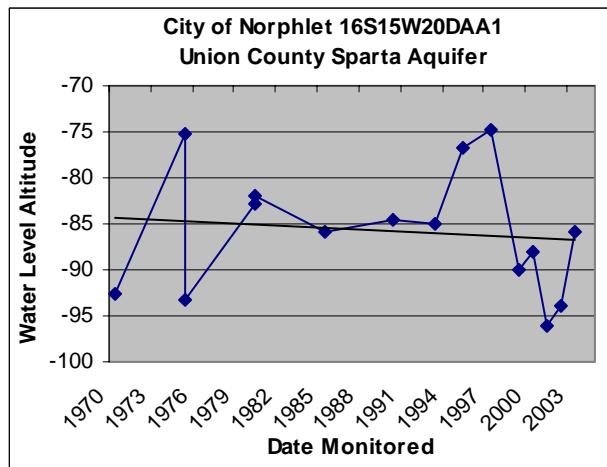
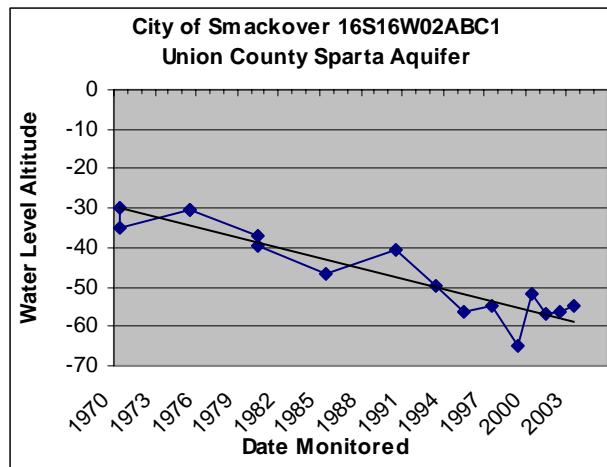
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Union	17S12W32BBC1	331203	0922218	230	3/5/2003	249.08	4.08	-23.77	-7.70	-19.08	-23.16	4.69	-11.38	
Union	17S13W31BAC1	331200.17	0922915.70	216	3/5/2003	299.97	-80.02	-93.10	-76.60	-83.97	-3.95	9.13	-7.37	
Union	17S14W10DCC1	331456.79	0923203.26	186	3/6/2003	94.2	90.96		85.60	91.80	0.84		6.20	
Union	17S14W15ABA1	331450	0923201	155	3/6/2003	94.65				60.35				
Union	17S15W06BAA1	331645.30	0924133.94	190	3/4/2003	258.75			-91.50	-68.75			22.75	
Union	17S15W08DCC1	331505	0924027	175	3/6/2003	333.65				-158.73				
Union	17S15W18DBB1	331438.96	0924129.21	183	3/4/2003	346.83	-176.20	-177.80	-173.50	-163.90	12.30	13.90	9.60	
Union	17S15W18DBB1	331438.96	0924129.21	183	4/30/2003	349.34	-176.27	-177.60		-166.41	9.86	11.19		
Union	17S15W18DBB1	331438.96	0924129.21	183	2/3/2003	350.4	-177.16	-177.90		-167.47	9.69	10.43		
Union	17S15W18DBB1	331438.96	0924129.21	183	2/18/2003	350.41				-167.48				
Union	17S15W18DBB1	331438.96	0924129.21	183	1/20/2003	377.34	-176.22	-177.60		-194.41	-18.19	-16.81		
Union	17S15W28DBA1	331246.08	0923909.78	230	4/3/2003	387.98			-167.40	-157.98			9.42	
Union	17S15W28DBA1	331246.08	0923909.78	230	3/10/2003	396.69				-166.69				
Union	17S15W28DBA1	331246.08	0923909.78	230	1/13/2003	397.66				-167.66				
Union	17S15W28DCC1	331232.92	0923923.73	285	3/19/2003	445.2			-160.40	-160.20			0.20	
Union	17S15W29CDC1	331228.71	0924039.39	220	3/19/2003	380.4			-172.80	-160.40			12.40	
Union	17S15W31DCA1	331145.05	0924116.74	272	3/5/2003	436.69	-188.45	-200.59	-174.70	-164.69	23.76	35.90	10.01	
Union	17S15W31DCA3	331144.43	0924116.29	255	3/5/2003	169.93				85.07				
Union	17S15W31DDA1	331143.75	0924104.87	261	4/3/2003	425.81				-164.81				
Union	17S15W31DDA1	331143.75	0924104.87	261	3/5/2003	426.27			-174.70	-165.27			9.43	
Union	17S15W31DDA1	331143.75	0924104.87	261	1/13/2003	427.48				-166.48				
Union	17S16W01ABB1	331649	0924253	189	3/6/2003	313.1				-124.26				
Union	17S16W02CCC1	331559	0924403	178	3/7/2003	339.93				-161.93				
Union	17S16W02DCD1	331602	0924326	218	3/7/2003	391.78				-173.78				
Union	17S16W12DCC1	331506	0924232	222	3/7/2003	399.07				-177.49				
Union	17S16W24BDB1	331357.24	0924248.47	205	3/19/2003	403.82	-198.09		-190.00	-198.82	-0.73		-8.82	
Union	17S17W30DCD1	331257.41	0925355.54	280	3/6/2003	319.4	-27.85	-30.00		-39.40	-11.55	-9.40		
Union	18S11W09ABC1	331011.92	0921443.35	135	3/6/2003	96.15			39.80	38.85			-0.95	
Union	18S12W33BBB1	330650.66	0922119.92	112	3/5/2003	137.32	-7.75		-25.10	-25.32	-17.57		-0.22	
Union	18S14W06CCA1	331040	0923531	225	3/5/2003	386.17		-151.30	-137.00	-161.17		-9.87	-24.17	
Union	18S15W07BAC2	331035	0924138	283	3/7/2003	366.52			-71.50	-83.52			-12.02	
Union	18S15W33ADA1	330659.32	0923858.48	253	3/5/2003	372.64	-122.48		-134.20	-119.64	2.84		14.56	
Union	18S15W35DAC1	330635.92	0923707.32	201	3/5/2003	306.48	-94.61	-106.40	-98.40	-105.48	-10.87	0.92	-7.08	
Union	18S16W10CDD1	331000.38	0924445.32	182	3/6/2003	325.82				-143.82				
Union	18S16W11AAB1	331041.13	0924314.10	225	4/3/2003	379.23				-154.23				
Union	18S16W11AAB1	331041.13	0924314.10	225	1/13/2003	380.7				-155.70				
Union	18S16W11DAB1	331011	0924317	266	3/6/2003	416.88		-197.00	-151.00	-150.88		46.12	0.12	
Union	18S16W12ACB1	331028.75	0924231.85	230	3/6/2003	453.75	-155.56	-175.00		-223.75	-68.19	-48.75		

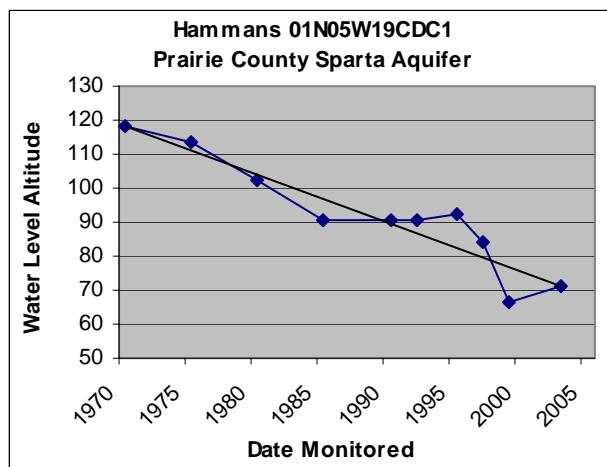
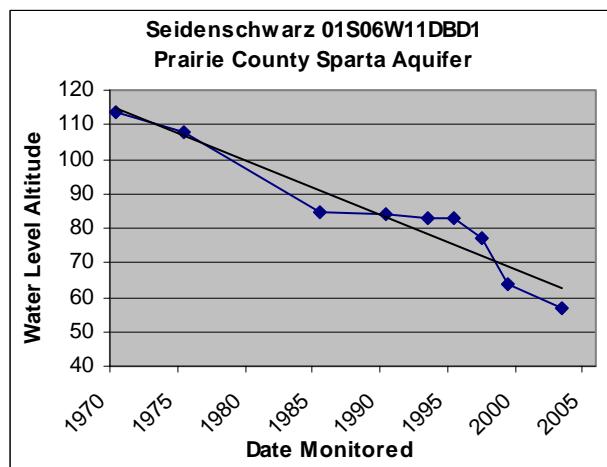
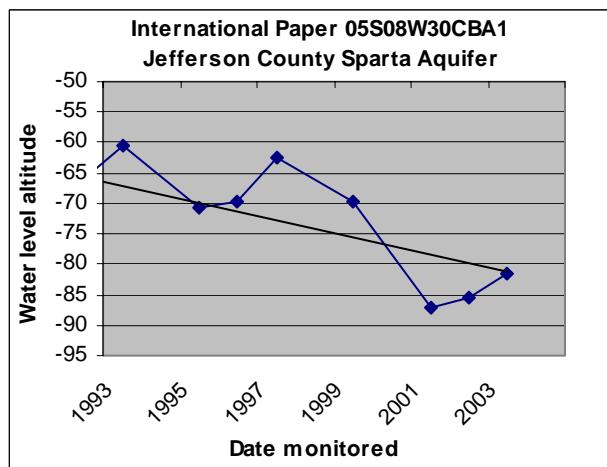
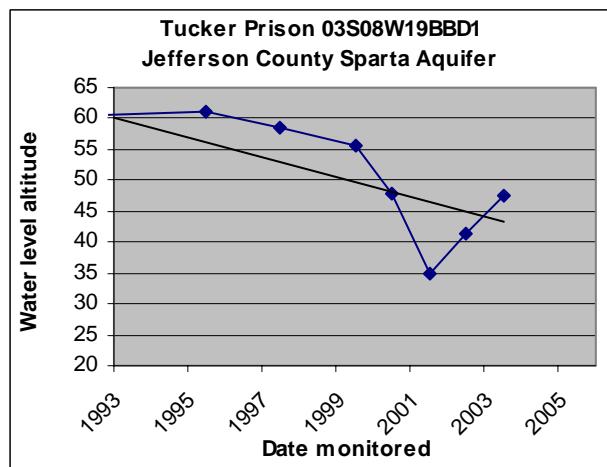
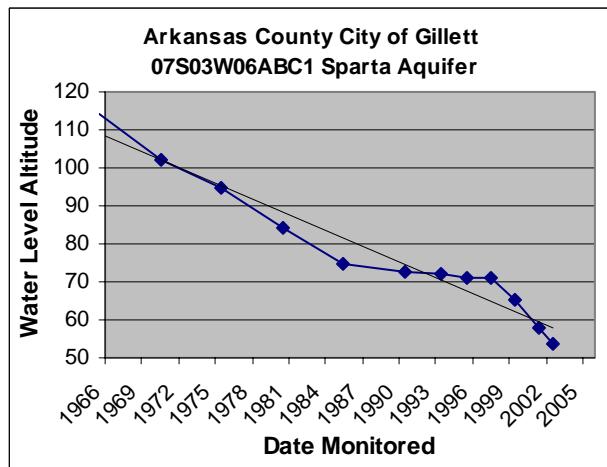
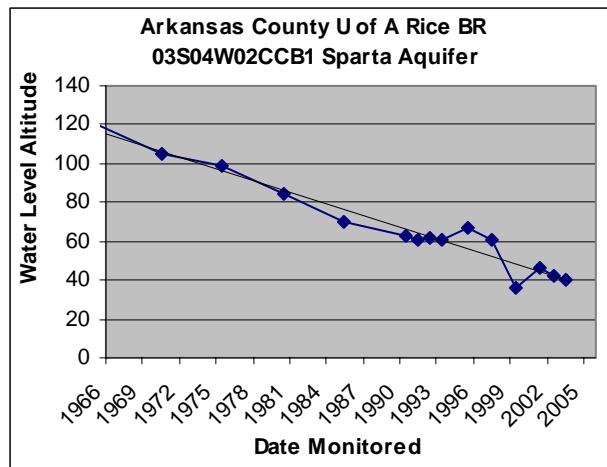
Sparta Aquifer
Data '93-'98-'02-'03

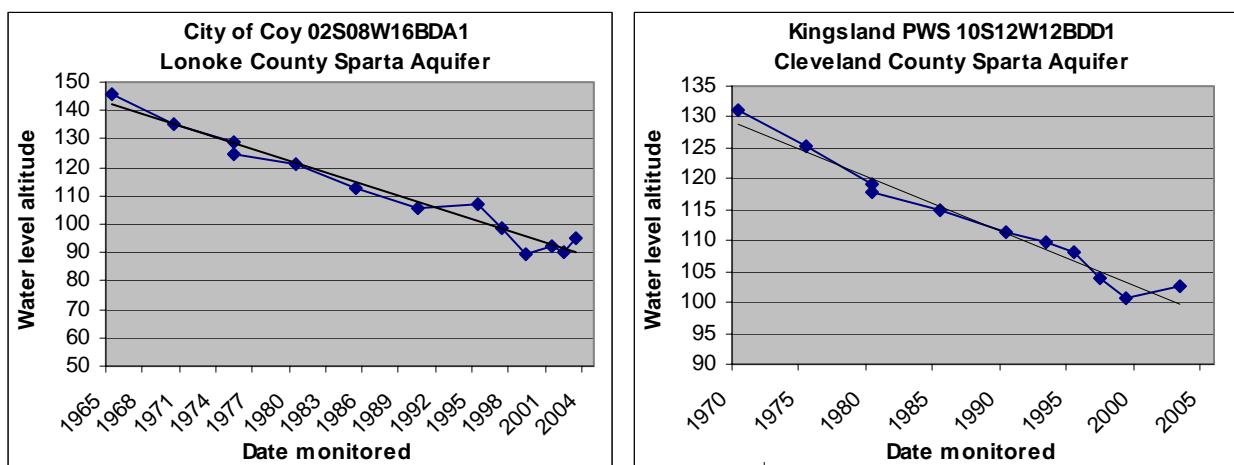
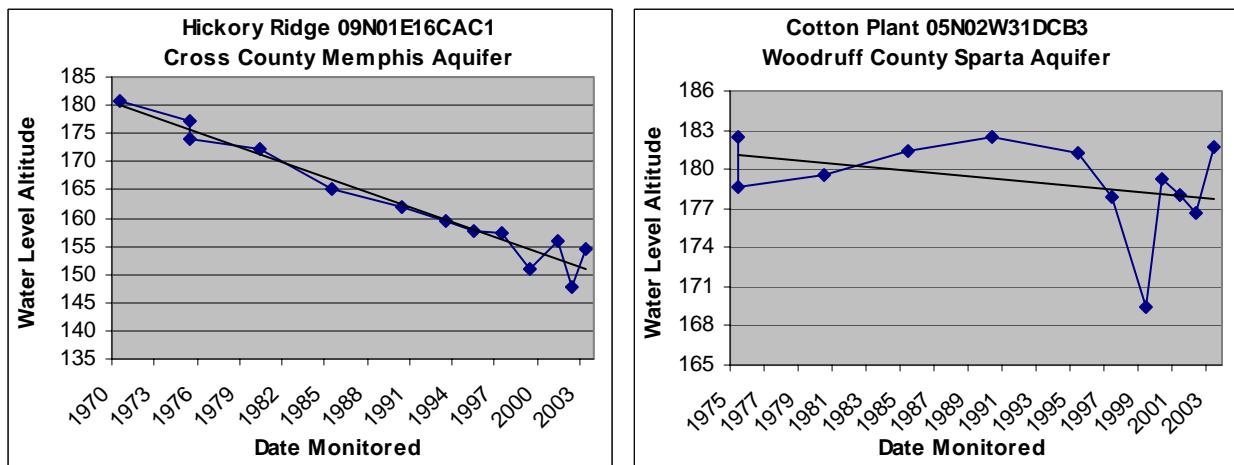
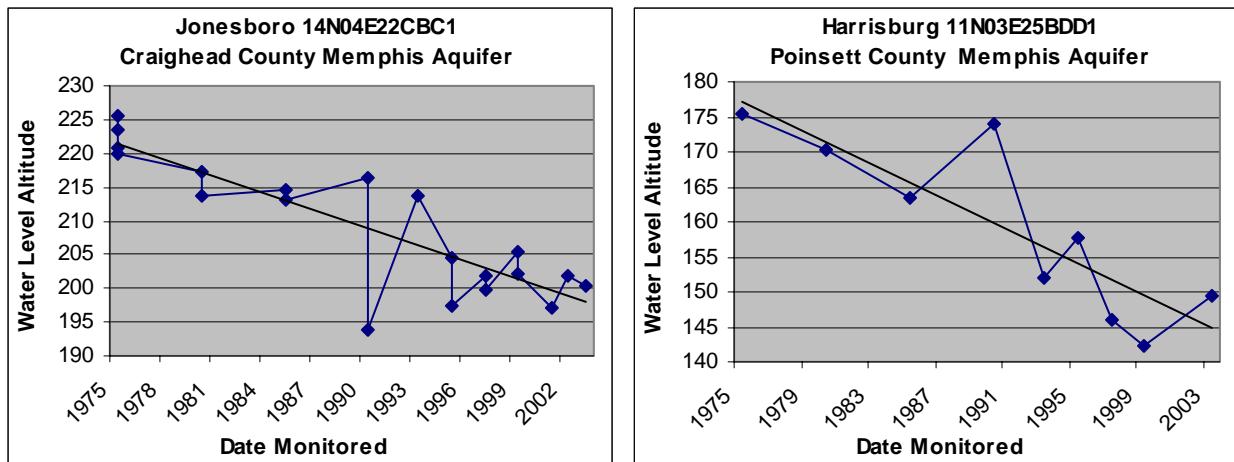
Appendix D

Selected Sparta/Memphis Aquifer Well Hydrographs









Appendix E

Cockfield and Wilcox Aquifer Water Level Data

Water Levels for Cockfield and Wilcox aquifers from 2000 to present

Co	Site id	Station	Lat	Long	Datum	Alt LSD	Alt Datum	Well Depth
001	342554091392501	03S06W21ACB1	342554.07	913927.23	NAD83	200	NGVD29	660
001	342554091392501	03S06W21ACB1	342554.07	913927.23	NAD83	200	NGVD29	660
001	340138091140501	08S02W04ACA1	340138.52	911405.94	NAD83	165	NGVD29	453
001	340138091140501	08S02W04ACA1	340138.52	911405.94	NAD83	165	NGVD29	453
003	332154091292801	15S04W26CBC1	332144.16	912932.04	NAD83	128	NGVD29	409
003	332154091292801	15S04W26CBC1	332144.16	912932.04	NAD83	128	NGVD29	409
003	331416091302802	17S04W10BCD2	331417.16	913029.96	NAD83	125	NGVD29	340
003	331416091302802	17S04W10BCD2	331417.16	913029.96	NAD83	125	NGVD29	340
003	331405091303201	17S04W10CBA1	331405.59	913032.52	NAD83	125	NGVD29	360
003	331405091303201	17S04W10CBA1	331405.59	913032.52	NAD83	125	NGVD29	360
003	331442091451001	17S06W07ADA1	331441.73	914510.26	NAD83	174	NGVD29	426
003	331442091451001	17S06W07ADA1	331441.73	914510.26	NAD83	174	NGVD29	426
003	330720091324601	18S04W19DAA2	330710.14	913247.2	NAD83	116	NGVD29	356
003	330720091324601	18S04W19DAA2	330710.14	913247.2	NAD83	116	NGVD29	356
003	331037091562601	18S08W04BBC1	331037.97	915627.09	NAD83	149	NGVD29	314
003	331037091562601	18S08W04BBC1	331037.97	915627.09	NAD83	149	NGVD29	314
003	330630091562902	18S08W29DDD2	330629.64	915629.28	NAD83	140	NGVD29	
003	330335091342601	19S05W12CAC1	330336.04	913424.8	NAD83	115	NGVD29	320
003	330335091342601	19S05W12CAC1	330336.04	913424.8	NAD83	115	NGVD29	320
011	333814092104401	12S10W30CAC1	333814.86	921046.17	NAD83	240	NGVD29	58.2
011	333814092104401	12S10W30CAC1	333814.86	921046.17	NAD83	240	NGVD29	58.2
011	333135092015501	14S09W04ABD1	333134.01	920157.71	NAD83	175	NGVD29	290
011	333140092052501	14S10W01BAD1	333138.81	920521.74	NAD83	231	NGVD29	540
011	333140092052501	14S10W01BAD1	333138.81	920521.74	NAD83	231	NGVD29	540
011	332658092102601	14S10W31DBA1	332657.77	921025.45	NAD83	193	NGVD29	349
011	332658092102601	14S10W31DBA1	332657.77	921025.45	NAD83	193	NGVD29	349
011	332656092125101	14S11W35CAB1	332656.05	921250.79	NAD83	190	NGVD29	320
011	332656092125101	14S11W35CAB1	332656.05	921250.79	NAD83	190	NGVD29	320
011	332650092123401	14S11W35DAC1	332649.91	921232.92	NAD83	174	NGVD29	345
011	332650092123401	14S11W35DAC1	332649.91	921232.92	NAD83	174	NGVD29	345
011	332536092185701	15S12W11CAB1	332536.2	921858.24	NAD83	155	NGVD29	225
011	332536092185701	15S12W11CAB1	332536.2	921858.24	NAD83	155	NGVD29	225
011	331949092061701	16S10W11DCB1	331950.8	920618.92	NAD83	152	NGVD29	152
011	331949092061701	16S10W11DCB1	331950.8	920618.92	NAD83	152	NGVD29	152
011	332026092122301	16S11W11ACA1	332027.06	921223.16	NAD83	141	NGVD29	140
011	332026092122301	16S11W11ACA1	332027.06	921223.16	NAD83	141	NGVD29	140
013	334558092253301	11S13W15BBC1	334559.5	922534.29	NAD83	310	NGVD29	70
013	334558092253301	11S13W15BBC1	334559.5	922534.29	NAD83	310	NGVD29	70
013	334558092253301	11S13W15BBC1	334559.5	922534.29	NAD83	310	NGVD29	70
013	333556092264501	13S13W09CBD1	333555.01	922637.58	NAD83	232	NGVD29	147
013	333556092264501	13S13W09CBD1	333555.01	922637.58	NAD83	232	NGVD29	147
013	333516092251701	13S13W15DBA1	333516.77	922519.52	NAD83	232	NGVD29	122
013	333516092251701	13S13W15DBA1	333516.77	922519.52	NAD83	232	NGVD29	122
013	335224092293401	13S14W13ACC1	333524.29	922934.83	NAD83	215	NGVD29	145
013	333045092245101	14S13W11CAC1	333045.41	922450.85	NAD83	205	NGVD29	105
013	333045092245101	14S13W11CAC1	333045.41	922450.85	NAD83	205	NGVD29	105
013	332828092272101	14S13W29ADA1	332829.4	922721.84	NAD83	160	NGVD29	81

013	332828092272101	14S13W29ADA1	332829.4	922721.84	NAD83	160	NGVD29	81
013	332811092272201	14S13W29DAC1	332814.95	922729.08	NAD83	139	NGVD29	
013	332811092272201	14S13W29DAC1	332814.95	922729.08	NAD83	139	NGVD29	
013	333213092322201	14S14W04ADA1	333212.52	923222.86	NAD83	176	NGVD29	149
013	332932092325001	14S14W21ACB1-A	332931.23	923249.3	NAD83	132	NGVD29	160
013	332932092325001	14S14W21ACB1-A	332931.23	923249.3	NAD83	132	NGVD29	160
013	332932092325001	14S14W21ACB1-A	332931.23	923249.3	NAD83	132	NGVD29	160
017	333244091225901	13S03W26BBB1	333246.81	912301.06	NAD83	139	NGVD29	422
017	333244091225901	13S03W26BBB1	333246.81	912301.06	NAD83	139	NGVD29	422
017	333104091260001	14S03W05BBA1	333106.11	912601.62	NAD83	139	NGVD29	510
017	333104091260001	14S03W05BBA1	333106.11	912601.62	NAD83	139	NGVD29	510
017	332317091243601	15S03W21ABA1	332314.42	912437.93	NAD83	122	NGVD29	400
017	332317091243601	15S03W21ABA1	332314.42	912437.93	NAD83	122	NGVD29	400
017	332030091185401	16S02W04BAC1	332027.37	911857.43	NAD83	125	NGVD29	330
017	332030091185401	16S02W04BAC1	332027.37	911857.43	NAD83	125	NGVD29	330
017	330645091154901	18S02W24CDB1	330651.76	911546.75	NAD83	129	NGVD29	364
017	330645091154901	18S02W24CDB1	330651.76	911546.75	NAD83	129	NGVD29	364
017	330640091154103	18S02W25ABB3	330640.4	911541.03	NAD83	135	NGVD29	332
017	330640091154103	18S02W25ABB3	330640.4	911541.03	NAD83	135	NGVD29	332
017	330731091231801	18S03W14CCC1	330731.03	912319.49	NAD83	98	NGVD29	320
017	330731091231801	18S03W14CCC1	330731.03	912319.49	NAD83	98	NGVD29	320
025	340334092115201	08S11W02BCB1	340334.31	921152.27	NAD83	241	NGVD29	395
025	340334092115201	08S11W02BCB1	340334.31	921152.27	NAD83	241	NGVD29	395
025	335854092244401	08S13W34BDA1	335901.6	922443.58	NAD83	248	NGVD29	181
025	335854092244401	08S13W34BDA1	335901.6	922443.58	NAD83	248	NGVD29	181
025	335530092094001	09S10W17CDD1	335533.53	920941.65	NAD83	270	NGVD29	361
025	335530092094001	09S10W17CDD1	335533.53	920941.65	NAD83	270	NGVD29	361
025	334449092125601	11S11W23BBD1	334449.24	921257.5	NAD83	275	NGVD29	148
025	334449092125601	11S11W23BBD1	334449.24	921257.5	NAD83	275	NGVD29	148
027	331312093091401	17S20W35BBD1	331312.79	930914.27	NAD83	361	NGVD29	
027	331312093091401	17S20W35BBD1	331312.79	930914.27	NAD83	361	NGVD29	
027	330233093095801	19S20W34ADC1	330233.23	930958.13	NAD83	313	NGVD29	39.8
027	330233093095801	19S20W34ADC1	330233.23	930958.13	NAD83	313	NGVD29	39.8
027	330520093185601	19S21W17CBB1	330519.87	931856.93	NAD83	306	NGVD29	54.8
027	330520093185601	19S21W17CBB1	330519.87	931856.93	NAD83	306	NGVD29	54.8
027	330245093151001	19S21W35ADC1	330247.49	931512.71	NAD83	256	NGVD29	30.1
027	330245093151001	19S21W35ADC1	330247.49	931512.71	NAD83	256	NGVD29	30.1
027	330246093203301	19S22W36DBB1	330244.94	932033.94	NAD83	351	NGVD29	68.6
027	330246093203301	19S22W36DBB1	330244.94	932033.94	NAD83	351	NGVD29	68.6
039	340536092243201	07S13W22CAC1	340535.31	922432.33	NAD83	190	NGVD29	136
041	333624091124201	12S01W32DCA1	333627.61	911244.74	NAD83	136	NGVD29	495
041	333624091124201	12S01W32DCA1	333627.61	911244.74	NAD83	136	NGVD29	495
041	333830091263001	12S03W30ADC1	333747.19	912611.12	NAD83	153	NGVD29	280
041	333830091263001	12S03W30ADC1	333747.19	912611.12	NAD83	153	NGVD29	280
041	333502091193201	13S02W08CAA1	333503.88	911920.57	NAD83	147	NGVD29	515
041	333502091193201	13S02W08CAA1	333503.88	911920.57	NAD83	147	NGVD29	515
043	334201091344901	11S05W35DDB1	334216.06	913438.36	NAD83	180	NGVD29	500
043	334201091344901	11S05W35DDB1	334216.06	913438.36	NAD83	180	NGVD29	500
043	333749091554201	12S08W33AAB1	333749.57	915550.67	NAD83	173	NGVD29	543
043	333749091554201	12S08W33AAB1	333749.57	915550.67	NAD83	173	NGVD29	543
043	332846091433801	14S06W21BDC1	332846.37	914338.98	NAD83	216	NGVD29	

043	332846091433801	14S06W21BDC1	332846.37	914338.98	NAD83	216	NGVD29
043	332846091433801	14S06W21BDC1	332846.37	914338.98	NAD83	216	NGVD29
043	332757091474701	14S07W26BAB1	332754.08	914744.45	NAD83	230	NGVD29
043	332757091474701	14S07W26BAB1	332754.08	914744.45	NAD83	230	NGVD29
079	340715091392201	07S06W14BBC1	340709.18	914025.67	NAD83	182	NGVD29
079	340715091392201	07S06W14BBC1	340709.18	914025.67	NAD83	182	NGVD29
079	335203091391701	10S05W06CAC1	335203.84	913917.74	NAD83	170	NGVD29
079	335203091391701	10S05W06CAC1	335203.84	913917.74	NAD83	170	NGVD29
085	343246091582302	02509W15BBB2	343246.5	915825	NAD83	226	NGVD29
085	343246091582302	02509W15BBB2	343246.5	915825	NAD83	226	NGVD29
139	331914092501701	16S17W23BCC1	331914.61	925017.57	NAD83	220	NGVD29
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139	331910092570701	16S18W22DCD1	331913.44	925703.65	NAD83	247	NGVD29
139	331910092570701	16S18W22DCD1	331913.44	925703.65	NAD83	247	NGVD29
139	331910092570701	16S18W22DCD1	331913.44	925703.65	NAD83	247	NGVD29
139	331218092192901	17S12W27DCA1	331219.26	921928.98	NAD83	170	NGVD29
139	331218092192901	17S12W27DCA1	331219.26	921928.98	NAD83	170	NGVD29
139	331401092274801	17S13W17DDC1	331402.11	922745.81	NAD83	193	NGVD29
139	331401092274801	17S13W17DDC1	331402.11	922745.81	NAD83	193	NGVD29
139	331404092304001	17S14W14DDD1	331405.93	923037.12	NAD83	135	NGVD29
139	331404092304001	17S14W14DDD1	331405.93	923037.12	NAD83	135	NGVD29
139	331144092411901	17S15W31DCA2	331144.14	924116.35	NAD83	253	NGVD29
139	331144092411901	17S15W31DCA2	331144.14	924116.35	NAD83	253	NGVD29
139	331144092411901	17S15W31DCA2	331144.14	924116.35	NAD83	253	NGVD29
139	331229092460002	17S16W33BBA2	331229.04	924600.84	NAD83	255	NGVD29
139	331229092460002	17S16W33BBA2	331229.04	924600.84	NAD83	255	NGVD29
139	331453092572201	17S18W15CDA1	331453.24	925722.95	NAD83	290	NGVD29
139	331453092572201	17S18W15CDA1	331453.24	925722.95	NAD83	290	NGVD29
139	330825092390801	18S15W21DAC1	330823.8	923909.29	NAD83	200	NGVD29
139	330825092390801	18S15W21DAC1	330823.8	923909.29	NAD83	200	NGVD29
139	330324092084502	19S10W16CBC2	330330.53	920905.99	NAD83	82	NGVD29
139	330201092211101	19S12W28CBA1	330207.08	922109.3	NAD83	200	NGVD29
139	330201092211101	19S12W28CBA1	330207.08	922109.3	NAD83	200	NGVD29
019	340917092560601	07S18W03BBD1	340916.58	925603.5	NAD83	270	NGVD29
019	340917092560601	07S18W03BBD1	340916.58	925603.5	NAD83	270	NGVD29
019	340653092575301	07S18W20ABB2	340651.92	925756.59	NAD83	242	NGVD29
019	340653092575301	07S18W20ABB2	340651.92	925756.59	NAD83	242	NGVD29
019	335611092590601	09S18W20CBB1	335610.94	925905.46	NAD83	230	NGVD29
019	335611092590601	09S18W20CBB1	335610.94	925905.46	NAD83	230	NGVD29
019	335214092561201	10S18W10DDB1	335215.53	925613.2	NAD83	195	NGVD29
019	335401093061201	10S20W01BAC1	335402.68	930612.28	NAD83	295	NGVD29
019	335401093061201	10S20W01BAC1	335402.68	930612.28	NAD83	295	NGVD29
021	362345090164901	20N07E01CBB1	362347.39	901702.65	NAD83	460	NGVD29
021	362345090164901	20N07E01CBB1	362347.39	901702.65	NAD83	460	NGVD29
021	362712090112601	21N08E14CBB1	362715.82	901126.15	NAD83	380	NGVD29
021	362712090112601	21N08E14CBB1	362715.82	901126.15	NAD83	380	NGVD29
031	354525090191001	13N07E14BBA2	354525.74	901911.04	NAD83	221	NGVD29
031	354525090191001	13N07E14BBA2	354525.74	901911.04	NAD83	221	NGVD29
031	354843090302901	14N05E25DCB1	354842.5	903028.78	NAD83	233	NGVD29
031	354843090302901	14N05E25DCB1	354842.5	903028.78	NAD83	233	NGVD29
031	354803090320801	14N05E34DAA1	354802.66	903208.26	NAD83	230	NGVD29

031	354803090320801	14N05E34DAA1	354802.66	903208.26	NAD83	230	NGVD29	865
031	354737090320901	14N05E34DDD1	354737.24	903208.74	NAD83	229	NGVD29	874
031	354737090320901	14N05E34DDD1	354737.24	903208.74	NAD83	229	NGVD29	874
031	354857090261201	14N06E27ACB2	354858.06	902612.88	NAD83	227	NGVD29	999
031	354857090261201	14N06E27ACB2	354858.06	902612.88	NAD83	227	NGVD29	999
031	355008090220201	14N07E17DCB1	355008.1	902202.27	NAD83	232	NGVD29	1070
031	355008090220201	14N07E17DCB1	355008.1	902202.27	NAD83	232	NGVD29	1070
031	355314090010801	15N07E33BAD1	355314.65	902107.49	NAD83	232	NGVD29	1034
031	355314090010801	15N07E33BAD1	355314.65	902107.49	NAD83	232	NGVD29	1034
035	345448090182701	04N07E36ADB1	355448.57	901827.9	NAD83	201	NGVD29	1638
035	345448090182701	04N07E36ADB1	355448.57	901827.9	NAD83	201	NGVD29	1638
035	350129090222501	05N07E29ACC1	350128.89	902224.94	NAD83	200	NGVD29	1700
035	350129090222501	05N07E29ACC1	350128.89	902224.94	NAD83	200	NGVD29	1700
035	350519090181001	06N07E01ABB1	350520.04	901807.36	NAD83	207	NGVD29	1541
035	350519090181001	06N07E01ABB1	350520.04	901807.36	NAD83	207	NGVD29	1541
035	350906090104201	06N09E07CAC1	350906.93	901041.83	NAD83	210	NGVD29	1470
035	350906090104201	06N09E07CAC1	350906.93	901041.83	NAD83	210	NGVD29	1470
035	351318090192901	07N07E14CCC1	351317.99	901930.17	NAD83	223	NGVD29	1584
035	351318090192901	07N07E14CCC1	351317.99	901930.17	NAD83	223	NGVD29	1584
035	351238090114701	07N08E24CAB1	351238.43	901147.62	NAD83	221	NGVD29	1540
035	351238090114701	07N08E24CAB1	351238.43	901147.62	NAD83	221	NGVD29	1540
035	351614090275401	08N06E33CBD1	351614.48	902752.47	NAD83	215	NGVD29	1750
035	351614090275401	08N06E33CBD1	351614.48	902752.47	NAD83	215	NGVD29	1750
035	352225090151501	09N08E29ADD1	352225.08	901515.82	NAD83	225	NGVD29	1564
035	352225090151501	09N08E29ADD1	352225.08	901515.82	NAD83	225	NGVD29	1564
039	340125092484501	08S17W14DCC1	340124.74	924832.18	NAD83	235	NGVD29	163
039	340125092484501	08S17W14DCC1	340124.74	924832.18	NAD83	235	NGVD29	163
039	335507092504901	09S17W28ACB1	335808.63	925051.33	NAD83	175	NGVD29	270
039	335507092504901	09S17W28ACB1	335808.63	925051.33	NAD83	175	NGVD29	270
055	360125090302501	16N05E13BAB1	360123.25	903026.27	NAD83	290	NGVD29	545
055	360125090302501	16N05E13BAB1	360123.25	903026.27	NAD83	290	NGVD29	545
055	360350090365801	17N04E36BCA1	360348.44	903658.17	NAD83	505	NGVD29	311
055	360350090365801	17N04E36BCA1	360348.44	903658.17	NAD83	505	NGVD29	311
055	360322090290401	17N06E31DCB1	360327.82	902902.22	NAD83	285	NGVD29	462
055	360322090290401	17N06E31DCB1	360327.82	902902.22	NAD83	285	NGVD29	462
055	361208090252001	18N06E10DCD1	361209.33	902519.91	NAD83	320	NGVD29	120
055	361208090252001	18N06E10DCD1	361209.33	902519.91	NAD83	320	NGVD29	120
057	333843093291101	13S23W04BDD1	333841.73	932911.4	NAD83	350	NGVD29	14.2
057	333828093330902	13S24W02DCA2	333829.33	933311.35	NAD83	446	NGVD29	63
057	333828093330902	13S24W02DCA2	333829.33	933311.35	NAD83	446	NGVD29	63
057	333522093363501	13S24W29ACC1	333523.99	933635.22	NAD83	371	NGVD29	60.2
057	333522093363501	13S24W29ACC1	333523.99	933635.22	NAD83	371	NGVD29	60.2
057	333017093370401	14S24W29BCA1	333016.72	933704.19	NAD83	355	NGVD29	30.5
057	333017093370401	14S24W29BCA1	333016.72	933704.19	NAD83	355	NGVD29	30.5
059	342146092453101	04S16W20CBB1	342144.24	924532.49	NAD83	345	NGVD29	18.2
059	342146092453101	04S16W20CBB1	342144.24	924532.49	NAD83	345	NGVD29	18.2
059	341838092485301	05S17W10AAC1	341835.92	924853.18	NAD83	410	NGVD29	26
059	341838092485301	05S17W10AAC1	341835.92	924853.18	NAD83	410	NGVD29	26
077	344203090411601	01N04E09DCC1	344209.13	904220.23	NAD83	204	NGVD29	1885
077	345416090313801	03N05E01BAB1	345413.29	903135.86	NAD83	196	NGVD29	1702
077	345416090313801	03N05E01BAB1	345413.29	903135.86	NAD83	196	NGVD29	1702

085	345624091583701	04N09W28CCD1	345621.23	915839.89	NAD83	325	NGVD29	110
085	345624091583701	04N09W28CCD1	345621.23	915839.89	NAD83	325	NGVD29	110
093	352923090150301	10N08E17ADD1	352923.16	901504.93	NAD83	225	NGVD29	1521
093	352923090150301	10N08E17ADD1	352923.16	901504.93	NAD83	225	NGVD29	1521
093	353537090125801	11N08E10AAC2	353538.1	901300.85	NAD83	220	NGVD29	1380
093	353537090125801	11N08E10AAC2	353538.1	901300.85	NAD83	220	NGVD29	1380
093	353216090074001	11N09E33AAB1	353214.43	900739.3	NAD83	237	NGVD29	1560
093	353216090074001	11N09E33AAB1	353214.43	900739.3	NAD83	237	NGVD29	1560
093	353344090021001	11N10E20ADA1	353348.86	900213.03	NAD83	235	NGVD29	1417
093	353344090021001	11N10E20ADA1	353348.86	900213.03	NAD83	235	NGVD29	1417
093	354033090055201	12N09E11DBB1	354032.78	900548.31	NAD83	230	NGVD29	1452
093	354033090055201	12N09E11DBB1	354032.78	900548.31	NAD83	230	NGVD29	1452
093	353917089561501	12N11E17CDD1	353916.85	895617.97	NAD83	245	NGVD29	1500
093	353917089561501	12N11E17CDD1	353916.85	895617.97	NAD83	245	NGVD29	1500
093	353911089561601	12N11E20BAA1	353911.44	895627.71	NAD83	242	NGVD29	1610
093	354528089554701	13N11E08DDA1	354528.38	895546.91	NAD83	245	NGVD29	1445
093	354528089554701	13N11E08DDA1	354528.38	895546.91	NAD83	245	NGVD29	1445
093	354215089580301	13N11E31CCCC1	354220.74	895806.8	NAD83	241	NGVD29	1500
093	354215089580301	13N11E31CCCC1	354220.74	895806.8	NAD83	241	NGVD29	1500
093	354859089562601	14N11E20CCA1	354859.29	895625.66	NAD83	240	NGVD29	1518
093	354859089562601	14N11E20CCA1	354859.29	895625.66	NAD83	240	NGVD29	1518
093	355606090152601	15N08E08DBC3	355606.85	901526.57	NAD83	238	NGVD29	1060
093	355606090152601	15N08E08DBC3	355606.85	901526.57	NAD83	238	NGVD29	1060
093	355252090095701	15N09E31ACD1	355305.56	900951.56	NAD83	240	NGVD29	1158
093	355252090095701	15N09E31ACD1	355305.56	900951.56	NAD83	240	NGVD29	1158
093	355712089580601	15N10E01ADC1	355712.28	895806.44	NAD83	248	NGVD29	1350
093	355712089580601	15N10E01ADC1	355712.28	895806.44	NAD83	248	NGVD29	1350
093	355415089463001	15N12E23DBC1	355426.05	894701.36	NAD83	238	NGVD29	1491
093	355415089463001	15N12E23DBC1	355426.05	894701.36	NAD83	238	NGVD29	1491
099	334046093193901	12S22W24CDA1	334045.77	931940.51	NAD83	344	NGVD29	41.2
099	334046093193901	12S22W24CDA1	334045.77	931940.51	NAD83	344	NGVD29	41.2
099	333754093142401	13S21W02DCC1	333753.62	931425.8	NAD83	315	NGVD29	240
099	333754093142401	13S21W02DCC1	333753.62	931425.8	NAD83	315	NGVD29	240
099	333738093143201	13S21W11BDA1	333737.73	931431.58	NAD83	268	NGVD29	
099	333555093142301	13S21W23ABC1	333555.78	931423.09	NAD83	362	NGVD29	47.2
099	333555093142301	13S21W23ABC1	333555.78	931423.09	NAD83	362	NGVD29	47.2
099	333105093244101	14S22W19AAA1	333105.49	932442.85	NAD83	337	NGVD29	75
099	333105093244101	14S22W19AAA1	333105.49	932442.85	NAD83	337	NGVD29	75
103	333918093012601	12S19W11DCD1	334143.57	930104.53	NAD83	288	NGVD29	533
103	333918093012601	12S19W11DCD1	334143.57	930104.53	NAD83	288	NGVD29	533
111	352924090213002	10N07E16CBB2	352924.65	902128.92	NAD83	218	NGVD29	1500
111	352924090213002	10N07E16CBB2	352924.65	902128.92	NAD83	218	NGVD29	1500
111	353622090361801	11N05E06CCD1	353621.64	903617.76	NAD83	214	NGVD29	992
111	353622090361801	11N05E06CCD1	353621.64	903617.76	NAD83	214	NGVD29	992
111	353622090361801	11N05E06CCD1	353621.64	903617.76	NAD83	214	NGVD29	992
111	353245090300001	11N05E36AAA1	353233.66	903009.4	NAD83	214	NGVD29	1175
111	353245090300001	11N05E36AAA1	353233.66	903009.4	NAD83	214	NGVD29	1175
111	353245090300001	11N05E36AAA1	353233.66	903009.4	NAD83	214	NGVD29	1175
111	353152090251601	11N06E35CDA3	353152.33	902519.67	NAD83	215	NGVD29	1301
111	353152090251601	11N06E35CDA3	353152.33	902519.67	NAD83	215	NGVD29	1301
111	353629090195501	11N07E03BDD1	353628.66	901954.89	NAD83	216	NGVD29	1456

111	353629090195501	11N07E03BDD1	353628.66	901954.89	NAD83	216	NGVD29	1456
111	354038090305901	12N05E13BBB1	344037.95	903059.05	NAD83	222	NGVD29	1071
111	354038090305901	12N05E13BBB1	344037.95	903059.05	NAD83	222	NGVD29	1071
123	345705090284201	04N06E16CCB1	345711.72	902829.76	NAD83	202	NGVD29	1615
123	345705090284201	04N06E16CCB1	345711.72	902829.76	NAD83	202	NGVD29	1615
123	345650090280802	04N06E21BAD2	345649	902814.83	NAD83	201	NGVD29	1740
123	345650090280802	04N06E21BAD2	345649	902814.83	NAD83	201	NGVD29	1740

Aquifer	WL	WL	WL	WL	WL	WL	WL	WL
Code	Date	Time	Meas.	Alt	Method	Accur.	Agency	Person
124CCKF	4/7/2003	1115		130.97	69.03 S	2	USGS	rft
124CCKF	4/25/2001	0930		132.79	67.21 S	2	USGS	rft
124CCKF	1/10/2000	1115		87.41	77.59 T	2	USGS	lmr
124CCKF	4/8/2003	0840		89.53	75.47 S	2	USGS	rft
124CCKF	1/12/2000	1220		39.02	88.98 S	2	USGS	lmr
124CCKF	3/20/2003	1200		41.99	86.01 S	2	USGS	rft
124CCKF	3/20/2003	1330		37.04	87.96 S	2	USGS	rft
124CCKF	1/12/2000	1145		37.54	87.46 S	2	USGS	lmr
124CCKF	3/20/2003	1415		32.96	92.04 S	2	USGS	rft
124CCKF	1/12/2000	1130		36.93	88.07 S	2	USGS	lmr
124CCKF	3/20/2003	1115		73.05	100.95 S	2	USGS	rft
124CCKF	1/12/2000	1430		81.2	92.8 S	2	USGS	lmr
124CCKF	1/12/2000	1010		25.11	90.89 S	2		
124CCKF	3/20/2003	1500		25.75	90.25 S	2	USGS	rft
124CCKF	3/20/2003	0805		78.95	70.05 S	2	USGS	rft
124CCKF	1/12/2000	1530		81.79	67.21 S	2	USGS	lmr
124CCKF	4/27/2000	1520		71.62	68.38 T	2	USGS	rft
124CCKF	3/20/2003	1610		27.24	87.76 S	2	USGS	rft
124CCKF	1/12/2000	1045		29.44	85.56 S	2	USGS	lmr
124CCKF	3/19/2003	1240		10.49	229.51 S	2	USGS	rft
124CCKF	1/14/2000	1110		17.28	222.72 T	2	USGS	lmr
124CCKF	4/26/2000	1220		48.44	126.56 T	2	USGS	rft
124CCKF	3/19/2003	1110		141.96	89.04 S	2	USGS	rft
124CCKF	1/24/2000	1445		145.07	85.93 S	2	USGS	lmr
124CCKF	1/14/2000	1020		93.28	99.72 S	2	USGS	lmr
124CCKF	3/19/2003	0905		94.86	98.14 S	2	USGS	rft
124CCKF	3/19/2003	0940		74.73	115.27 S	2	USGS	rft
124CCKF	1/24/2000	1410		75.41	114.59 S	2	USGS	lmr
124CCKF	1/24/2000	1350		63.31	110.69 S	2	USGS	lmr
124CCKF	3/19/2003	0955		63.94	110.06 S	2	USGS	rft
124CCKF	3/19/2003	1030		22.19	132.81 S	2	USGS	rft
124CCKF	1/14/2000	0945		23.09	131.91 S	2	USGS	lmr
124CCKF	1/14/2000	0835		44.65	107.35 T	2	USGS	lmr
124CCKF	3/19/2003	0835		53.2	98.8 S	2	USGS	rft
124CCKF	3/19/2003	0740		26.45	114.55 S	2	USGS	rft
124CCKF	1/14/2000	0910		33.02	107.98 T	2	USGS	lmr
124CCKF	3/14/2003	1100		50.33	259.67 S	2	USGS	dss
124CCKF	4/24/2000	1000		52.95	257.05 T	2	USGS	rft
124CCKF	1/14/2000	1435		53.04	256.96 T	2	USGS	lmr
124CCKF	4/24/2000	1230		35.72	196.28 S	2	USGS	rft
124CCKF	3/14/2003	1000		36.47	195.53 S	2	USGS	dss
124CCKF	3/14/2003	0930		19.11	212.89 S	2	USGS	dss
124CCKF	4/13/2000	0910		22.07	209.93 T	2	USGS	rft
124CCKF	1/14/2000	1335		31.02	183.98 T	2	USGS	lmr
124CCKF	4/30/2003	1020		27.11	177.89 S	2	USGS	rft
124CCKF	4/25/2000	1025		28.35	176.65 T	2	USGS	rft
124CCKF	3/14/2003	0830		25.72	134.28 S	2	USGS	dss

124CCKF	1/14/2000	1235	26.72	133.28	T	2	USGS	lmr
124CCKF	3/14/2003	0800	13.53	125.47	S	2	USGS	dsy
124CCKF	4/18/2001	0950	13.71	125.29	S	2	USGS	lmr
124CCKF	4/13/2000	1000	12.07	163.93	T	2	USGS	rfm
124CCKF	4/25/2000	0820	16.86	115.14	T	2		
124CCKF	1/14/2000	1305	16.96	115.04	T	2		
124CCKF	3/13/2003	1530	39.11	92.89	S	2	USGS	dsy
124CCKF	1/11/2000	1635	67.07	71.93	S	2	USGS	lmr
124CCKF	3/21/2003	1015	70.1	68.9	S	2	USGS	rfm
124CCKF	1/12/2000	1255	75.98	63.02	S	2	USGS	lmr
124CCKF	3/21/2003	0930	76.91	62.09	S	2	USGS	rfm
124CCKF	3/21/2003	0835	38.2	83.8	S	2	USGS	rfm
124CCKF	1/11/2000	1715	46.65	75.35	S	2		
124CCKF	1/12/2000	0730	41.86	83.14	S	2	USGS	lmr
124CCKF	3/21/2003	0745	45.12	79.88	S	2	USGS	rfm
124CCKF	1/12/2000	0900	45.66	83.34	S	2	USGS	lmr
124CCKF	3/24/2003	1440	45.99	83.01	S	2	USGS	rfm
124CCKF	3/24/2003	1400	43.42	91.58	S	2	USGS	rfm
124CCKF	1/12/2000	0845	46.02	88.98	S	2	USGS	lmr
124CCKF	3/24/2003	1540	13.66	84.34	S	2	USGS	rfm
124CCKF	1/12/2000	0940	14.13	83.87	S	2	USGS	lmr
124CCKF	3/27/2003	1500	28.42	212.58	S	2	USGS	twh
124CCKF	1/18/2000	0910	147.12	93.88	S	2	USGS	lmr
124CCKF	4/3/2003	1135	85.46	162.54	S	2	USGS	twh
124CCKF	1/18/2000	1220	86.92	161.08	S	2	USGS	lmr
124CCKF	3/26/2003	1525	3.57	266.43	T	2	USGS	rms
124CCKF	1/18/2000	0950	5.42	264.58	T	2		
124CCKF	3/26/2003	1055	40.1	234.9	T	2	USGS	rms
124CCKF	1/18/2000	1130	43.08	231.92	T	2		
124CCKF	3/18/2003	1520	7.57	353.43	S	2	USGS	rfm
124CCKF	1/19/2000	1245	15.13	345.87	S	2	USGS	lmr
124CCKF	3/18/2003	1615	17.71	295.29	S	2	USGS	rfm
124CCKF	1/19/2000	1315	22.62	290.38	T	2	USGS	lmr
124CCKF	3/18/2003	1800	42.47	263.53	S	2	USGS	rfm
124CCKF	1/19/2000	1420	44.13	261.87	T	2	USGS	lmr
124CCKF	3/18/2003	1650	0.91	255.09	S	2	USGS	rfm
124CCKF	1/19/2000	1335	3.42	252.58	T	2	USGS	lmr
124CCKF	3/18/2003	1730	39.18	311.82	S	2	USGS	rfm
124CCKF	1/19/2000	1400	40.56	310.44	T	2	USGS	lmr
124CCKF	1/18/2000	1255	27.8	162.2	S	2	USGS	lmr
124CCKF	1/11/2000	0910	63.86	72.14	S	2	USGS	lmr
124CCKF	3/25/2003	1100	67.78	68.22	S	2	USGS	rfm
124CCKF	3/25/2003	0900	70.89	82.11	S	2	USGS	rfm
124CCKF	1/11/2000	1045	73.79	79.21	S	2	USGS	lmr
124CCKF	3/25/2003	0945	62.62	84.38	S	2	USGS	rfm
124CCKF	1/11/2000	0945	63.02	83.98	S	2	USGS	lmr
124CCKF	3/26/2003	1610	96.66	83.34	S	2	USGS	rfm
124CCKF	1/11/2000	1215	97.48	82.52	S	2	USGS	lmr
124CCKF	1/11/2000	1340	95.19	77.81	S	2	USGS	lmr
124CCKF	3/26/2003	1440	99.26	73.74	S	2	USGS	rfm
124CCKF	1/11/2000	1510	116.66	99.34	S	2	USGS	lmr

124CCKF	5/29/2001	1300	117.97	98.03	U	2	USGS	rfm
124CCKF	3/26/2003	1115	118.77	97.23	S	2	USGS	rfm
124CCKF	1/11/2000	1425	120.96	109.04	S	2	USGS	lmr
124CCKF	3/26/2003	1205	122.87	107.13	S	2	USGS	rfm
124CCKF	1/10/2000	1315	19.1	162.9	T	2		
124CCKF	3/27/2003	1345	19.89	162.11	S	2	USGS	rfm
124CCKF	3/27/2003	0900	99.9	70.1	S	2	USGS	rfm
124CCKF	1/10/2000	1520	101.43	68.57	S	2		
124CCKF	1/20/2000	1440	67.93	158.07	S	2		
124CCKF	4/11/2003	0800	72.99	153.01	S	2	USGS	rfm
124CCKF	4/30/2003	1150	14.43	205.57	S	2	USGS	rfm
124CCKF	1/13/2000	0755	18.34	201.66	T	2	USGS	LMR
124CCKF	4/16/2001	1600	5.8	241.2	T	2		
124CCKF	3/6/2003	1415	7.86	239.14	S	2	USGS	rfm
124CCKF	1/13/2000	0820	25.21	221.79	T	2		
124CCKF	4/30/2003	1615	9.81	160.19	S	2	USGS	rfm
124CCKF	1/13/2000	1535	12.31	157.69	T	2	USGS	LMR
124CCKF	4/30/2003	1650	38.02	154.98	S	2	USGS	rfm
124CCKF	1/13/2000	1505	39.59	153.41	S	2	USGS	LMR
124CCKF	4/30/2003	1720	4.59	130.41	S	2	USGS	rfm
124CCKF	1/13/2000	1440	8.51	126.49	T	2	USGS	LMR
124CCKF	4/17/2001	1430	49.23	203.77	U	2		
124CCKF	3/5/2003	0800	49.92	203.08	S	2	USGS	rfm
124CCKF	1/13/2000	1335	52.68	200.32	T	2	USGS	LMR
124CCKF	1/13/2000	1100	24.86	230.14	T	2	USGS	LMR
124CCKF	4/30/2003	1310	25.25	229.75	S	2	USGS	rfm
124CCKF	4/30/2003	1230	27.83	262.17	S	2	USGS	rfm
124CCKF	1/13/2000	0845	28.36	261.64	T	2	USGS	LMR
124CCKF	4/30/2003	1400	24.43	175.57	S	2	USGS	rfm
124CCKF	1/13/2000	1405	26.29	173.71	S	2	USGS	LMR
124CCKF	1/13/2000	1705	85.78	-3.78	S	2	USGS	LMR
124CCKF	4/30/2003	1440	10.35	189.65	S	2	USGS	rfm
124CCKF	1/13/2000	1605	10.53	189.47	T	2	USGS	LMR
124WLCX	1/20/2000	1050	13.73	256.27	T	2	USGS	lmr
124WLCX	3/24/2003	1400	14.51	255.49	T	2	USGS	rms
124WLCX	3/24/2003	1425	11.29	230.71	T	2	USGS	rms
124WLCX	1/20/2000	1035	13.05	228.95	T	2	USGS	lmr
124WLCX	3/24/2003	1530	17.97	212.03	T	2	USGS	rms
124WLCX	1/20/2000	0935	22.03	207.97	T	2	USGS	lmr
124WLCX	1/20/2000	0900	47.42	147.58	T	2	USGS	lmr
124WLCX	3/25/2003	0815	29.75	265.25	T	2	USGS	rms
124WLCX	1/20/2000	0815	32.44	262.56	T	2	USGS	lmr
124WLCX	1/25/2000	1100	91.95	368.05	T	2	USGS	lmr
124WLCX	4/17/2003	1450	92.85	367.15	S	2	USGS	rfm
124WLCX	4/17/2003	1350	84.08	295.92	S	2	USGS	rfm
124WLCX	1/25/2000	1020	88.99	291.01	S	2	USGS	lmr
124WLCX	4/16/2003	0930	23.71	197.29	S	2	USGS	rfm
124WLCX	1/25/2000	1630	38.66	182.34	S	2	USGS	lmr
124WLCX	4/16/2003	1345	39.96	193.04	S	2	USGS	rfm
124WLCX	3/2/2000	1505	43.35	189.65	S	2	USGS	tps
124WLCX	4/16/2003	1250	39.64	190.36	S	2	USGS	rfm

124WLCX	3/2/2000	1640	43.15	186.85	T	2	USGS	tps
124WLCX	4/16/2003	1230	39.67	189.33	S	2	USGS	rfm
124WLCX	3/2/2000	1650	43.2	185.8	T	2	USGS	tps
124WLCX	4/16/2003	1000	30.36	196.64	S	2	USGS	rfm
124WLCX	1/25/2000	1540	36.44	190.56	S	2	USGS	lmr
124WLCX	4/16/2003	0730	30.74	201.26	S	2	USGS	rfm
124WLCX	1/26/2000	1130	36.96	195.04	S	2	USGS	lmr
124WLCX	4/16/2003	0815	26.87	205.13	S	2	USGS	rfm
124WLCX	1/26/2000	1110	32.13	199.87	S	2		
124WLCX	1/27/2000	1615	54.88	146.12	S	2	USGS	lmr
124WLCX	4/14/2003	1300	58.87	142.13	S	2	USGS	rfm
124WLCX	1/27/2000	1510	56.47	143.53	S	2	USGS	lmr
124WLCX	4/14/2003	1330	60.72	139.28	S	2	USGS	rfm
124WLCX	1/27/2000	1435	60.93	146.07	S	2	USGS	lmr
124WLCX	4/14/2003	1445	64.25	142.75	S	2	USGS	rfm
124WLCX	1/27/2000	1340	85.72	124.28	S	2	USGS	lmr
124WLCX	4/14/2003	1815	89.08	120.92	S	2	USGS	rfm
124WLCX	4/14/2003	1600	66.46	156.54	S	2	USGS	rfm
124WLCX	2/2/2000	1025	69.81	153.19	S	2	USGS	lmr
124WLCX	1/27/2000	1240	66.68	154.32	S	2	USGS	lmr
124WLCX	4/14/2003	1800	66.87	154.13	S	2	USGS	rfm
124WLCX	4/14/2003	1640	52.39	162.61	S	2	USGS	rfm
124WLCX	1/27/2000	1135	54.04	160.96	S	2	USGS	lmr
124WLCX	1/27/2000	1100	55.2	169.8	S	2	USGS	lmr
124WLCX	4/14/2003	1715	57.89	167.11	S	2	USGS	rfm
124WLCX	3/26/2003	0730	-1.8	236.8	T	2	USGS	RMS
124WLCX	1/18/2000	1600	-0.3	235.3	T	2	USGS	lmr
124WLCX	3/25/2003	1030	83.92	91.08	T	2	USGS	rms
124WLCX	1/18/2000	1505	97.47	77.53	S	2	USGS	lmr
124WLCX	4/17/2003	0945	100.38	189.62	S	2	USGS	rfm
124WLCX	1/25/2000	1415	133.04	156.96	S	2	USGS	lmr
124WLCX	4/17/2003	1135	153.38	351.62	S	2	USGS	rfm
124WLCX	1/25/2000	1255	158.21	346.79	S	2	USGS	lmr
124WLCX	4/17/2003	1030	104.85	180.15	S	2	USGS	rfm
124WLCX	1/25/2000	1335	115.17	169.83	S	2	USGS	lmr
124WLCX	4/17/2003	1240	24.63	295.37	S	2	USGS	rfm
124WLCX	1/25/2000	1200	25.66	294.34	S	2	USGS	lmr
124WLCX	1/19/2000	1710	4.46	345.54	T	2	USGS	lmr
124WLCX	3/10/2003	1325	45.43	400.57	T	2	USGS	twh
124WLCX	1/19/2000	1645	47.98	398.02	T	2		
124WLCX	1/19/2000	1620	32.91	338.09	T	2	USGS	lmr
124WLCX	3/10/2003	1423	43.08	327.92	T	2	USGS	twh
124WLCX	3/10/2003	1450	17.7	337.3	T	2	USGS	twh
124WLCX	1/19/2000	1600	25.64	329.36	T	2	USGS	lmr
124WLCX	3/24/2003	1135	4.62	340.38	T	2	USGS	rms
124WLCX	1/20/2000	1220	4.92	340.08	T	2	USGS	LMR
124WLCX	3/3/2003	1650	17.23	392.77	T	2	USGS	twh
124WLCX	1/20/2000	1155	19.07	390.93	T	2	USGS	lmr
124WLCX	1/21/2000	0840	53.78	150.22	S	2		
124WLCX	1/21/2000	0930	48.22	147.78	S	2		
124WLCX	4/9/2003	1120	49.44	146.56	S	2	USGS	twh

124WLCX	4/11/2003 0930	48.67	276.33 S	2	USGS	rfm
124WLCX	1/20/2000 1545	57.12	267.88 T	2		
124WLCX	1/27/2000 1020	50.42	174.58 S	2		
124WLCX	4/15/2003 0745	51.03	173.97 S	2	USGS	rfm
124WLCX	4/15/2003 0810	37.09	182.91 S	2	USGS	rfm
124WLCX	1/27/2000 0820	51.28	168.72 S	2		
124WLCX	4/15/2003 0850	47.98	189.02 S	2	USGS	rfm
124WLCX	1/27/2000 0945	54.27	182.73 S	2		
124WLCX	4/15/2003 1145	45.62	189.38 S	2	USGS	rfm
124WLCX	1/27/2000 0905	47.28	187.72 S	2		
124WLCX	4/15/2003 1300	33.07	196.93 S	2	USGS	rfm
124WLCX	1/26/2000 1625	35.38	194.62 S	2		
124WLCX	4/15/2003 1225	50.4	194.6 S	2	USGS	rfm
124WLCX	1/26/2000 1450	72.46	172.54 S	2		
124WLCX	1/26/2000 1520	70	172 H	2		
124WLCX	4/15/2003 1430	56.52	188.48 S	2	USGS	rfm
124WLCX	1/26/2000 1330	62.22	182.78 S	2		
124WLCX	1/26/2000 1405	49.48	191.52 S	2		
124WLCX	4/15/2003 1350	52.17	188.83 S	2	USGS	rfm
124WLCX	4/15/2003 1515	35.53	204.47 S	2	USGS	rfm
124WLCX	1/26/2000 1300	36.11	203.89 S	2		
124WLCX	4/15/2003 1830	22.24	215.76 S	2	USGS	rfm
124WLCX	1/26/2000 1020	28.65	209.35 S	2		
124WLCX	4/15/2003 1800	37.98	202.02 S	2	USGS	rfm
124WLCX	1/26/2000 0950	39.39	200.61 S	2		
124WLCX	4/15/2003 1700	36.25	211.75 S	2	USGS	rfm
124WLCX	1/26/2000 0840	38.06	209.94 S	2		
124WLCX	4/15/2003 1600	54.23	183.77 S	2	USGS	rfm
124WLCX	1/26/2000 0745	56.86	181.14 S	2		
124WLCX	3/11/2003 0845	27.58	316.42 T	2	USGS	twh
124WLCX	1/19/2000 1050	31.14	312.86 T	2		
124WLCX	3/11/2003 0945	22.5	292.5 T	2	USGS	twh
124WLCX	1/19/2000 1000	62.84	252.16 T	2		
124WLCX	3/11/2003 1000	23.44	244.56 S	2	USGS	TWH
124WLCX	3/10/2003 1720	27.1	334.9 T	2	USGS	twh
124WLCX	1/19/2000 1025	42.15	319.85 T	2		
124WLCX	3/12/2003 1600	8.25	328.75 T	2	USGS	twh
124WLCX	1/19/2000 1130	25.23	311.77 T	2		
124WLCX	1/19/2000 0900	5.73	282.27 S	2		
124WLCX	3/13/2003 1425	15.59	272.41 T	2	USGS	twh
124WLCX	2/2/2000 1130	43.87	174.13 S	2		
124WLCX	4/21/2003 1032	49.4	168.6 S	2	USGS	rfm
124WLCX	3/3/2000 1059	41.19	172.81 S	2		
124WLCX	4/21/2003 1400	41.5	172.5 S	2	USGS	rfm
124WLCX	3/3/2000 1030	41.54	172.46 S	2		
124WLCX	4/21/2003 1300	36.57	177.43 S	2	USGS	rfm
124WLCX	3/2/2000 1331	38.21	175.79 S	2		
124WLCX	3/2/2000 1301	38.22	175.78 S	2		
124WLCX	4/21/2003 1100	29.87	185.13 S	2	USGS	rfm
124WLCX	2/2/2000 1300	38.68	176.32 S	2		
124WLCX	4/21/2003 1200	38.92	177.08 S	2	USGS	rfm

124WLCX	2/2/2000	1230	46.42	169.58	S	2		
124WLCX	4/21/2003	1500	45.59	176.41	S	2	USGS	rfm
124WLCX	2/2/2000	1400	46.87	175.13	S	2		
124WLCX	4/9/2003	1020	51.86	150.14	S	2	USGS	twh
124WLCX	1/21/2000	1015	57.46	144.54	S	2		
124WLCX	1/21/2000	1000	55.92	145.08	S	2		
124WLCX	4/9/2003	1000	59.38	141.62	S	2	USGS	twh

Appendix F

Comparative Table of Selected Spring/Fall Water Level Changes in the Alluvial Aquifer

Spring/Fall Draw-downs on
Selected Alluvial Wells
2003

County	Station ID	Well	Aquifer	Date	spring		fall		SPRING FALL CHANGE
					WL Alt.03	Date	WL Alt.03		
Arkansas	USGS 05S04W32BBA1		110ALVM	2/13/2003	131.70	10/14/2003	131.90	0.2	
Arkansas	USGS 05S04W07CCC1	120	110ALVM	2/13/2003	116.79	10/14/2003	113.99	-2.8	
Arkansas	USGS 06S03W10BBA1	155	110ALVM	3/16/2003	101.40	10/14/2003	95.20	-6.2	
Arkansas	USGS 03S04W02BBB1	116	110ALVM	2/18/2003	106.33	10/15/2003	106.83	0.5	
Arkansas	USGS 10S04W04BAA1		110ALVM	2/13/2003	92.70	10/14/2003	92.10	-0.6	
Arkansas	USGS 03S04W03DCA16	126	110ALVM	2/19/2003	105.15	10/15/2003	104.50	-0.65	
Arkansas	USGS 03S05W03CCC1	110	110ALVM	2/20/2003	108.35	10/15/2003	107.80	-0.55	
Arkansas	USGS 04S03W17ADD1		110ALVM	2/19/2003	93.30	10/15/2003	91.50	-1.8	
Arkansas	USGS 04S03W32BCB1		110ALVM	2/13/2003	85.00	10/14/2003	77.10	-7.9	
Arkansas	USGS 04S04W02ABB1	155	110ALVM	2/19/2003	91.60	10/15/2003	83.40	-8.2	
Arkansas	USGS 05S03W21BAA		110ALVM	2/12/2003	81.90	10/14/2003	77.20	-4.7	
Arkansas	USGS 05S03W16ABB1		110ALVM	4/23/2003	74.30	10/14/2003	66.30	-8	
Ashley	ASWCC 18S04W08CAD1		110ALVM	3/20/2003	90.05	10/22/2003	85.40	-4.65	
Chicot	USGS 17S02W10AAA1	90	110ALVM	2/10/03	86.60	10/23/2002	85.20	-1.4	
Clay	USGS 21N08E36ABB1	90	110ALVM	3/2/2003	283.00	10/20/2003	277.65	-5.35	
Clay	ASWCC 20N04E02BBC1		112TRRC	3/2/2003	269.90	10/20/2003	266.95	-2.95	
Clay	AR008 21N06E28BB1	130	110ALVM	3/20/2003	274.60	10/20/2003	273.60	-1	
Clay	AR008 20N04E06BB1	110	110ALVM	3/2/2003	271.30	10/20/2003	269.40	-1.9	
Craighead	USGS 15N07E10DBA1	120	110ALVM	3/5/2003	230.63	10/21/2003	226.75	-3.88	
Craighead	USGS 15N03E19ADA1	116	112TRRC	3/5/2003	215.70	10/20/2003	214.45	-1.25	
Craighead	USGS 14N02E18BDD1	120	112TRRC	3/5/2003	192.00	10/21/2003	190.00	-2	
Craighead	USGS 13N01E23DAA1	118	112TRRC	3/5/2003	172.95	10/20/2003	170.70	-2.25	
Crittenden	USGS 07N07E05DAD1		110ALVM	3/5/2003	185.65	10/21/2003	185.85	0.2	
Cross	USGS 08N05E32ADD1		110ALVM	3/10/2003	177.30	10/21/2003	176.20	-1.1	
Desha	AR008 10S03W26CCC		110ALVM	3/24/2003	109.20	10/23/2003	104.70	-4.5	
Drew	USGS 11S05W08CCC1	153	110ALVM	2/11/2003	148.70	10/24/2003	148.30	-0.4	
Greene	USGS 18N07E23CCD1		110ALVM	3/3/2003	244.40	10/20/2003	240.90	-3.5	
Greene	USSCS 17N03E02BDB1	115	110ALVM	3/2/2003	237.36	10/21/2003	236.06	-1.3	
Greene	USGS 17N04E30CDC1	100	112TRRC	3/3/2003	229.95	10/20/2003	228.50	-1.45	
Greene	USSCS 16N03E19DBC1		110ALVM	3/3/2003	228.25	10/20/2003	226.50	-1.75	
Jackson	AR008 11N03W06DAB1	100	110ALVM	4/15/2003	203.30	11/4/2003	198.00	-5.3	
Jackson	USSCS 10N01W04DCB1		110ALVM	3/12/2003	172.50	11/4/2003	171.20	-1.3	
Jackson	USGS 11N01W26AAD1	95	112TRRC	3/12/2003	158.20	11/4/2003	156.35	-1.85	
Jefferson	USGS 05S08W12DAA1	101	110ALVM	3/26/2003	177.70	10/14/2003	171.90	-5.8	
Jefferson	USGS 07S08W06BAA1	160	110ALVM	3/24/2003	184.01	10/14/2003	181.11	-2.9	
Jefferson	USGS 06S06W23AAD1	107	110ALVM	3/25/2003	170.41	10/14/2003	166.01	-4.4	

Spring/Fall Draw-downs on
Selected Alluvial Wells
2003

County	Station ID	Well	Aquifer	Date	spring	Date	fall	WL Alt.03	SPRING
					WL Alt.03		WL Alt.03		FALL CHANGE
Jefferson	USGS 07S07W18CAC1	65	110ALVM	3/24/2003	160.30	10/14/2003	152.00	-8.3	
Lawrence	USSCS 17N01E26CCC1		112TRRC	3/4/2003	231.10	10/20/2003	230.60	-0.5	
Lawrence	USSCS 17N02E03BBB1		112TRRC	3/4/2003	232.00	10/20/2003	230.80	-1.2	
Lawrence	USGS 16N01E11DAC2		110ALVM	3/3/2003	217.20	10/20/2003	213.70	-3.5	
Lee	AR008 03N05E14DDA1	120	110ALVM	3/18/2003	180.35	11/5/2003	179.50	-0.85	
Lee	AR008 02N02E08ADC1	120	110ALVM	3/18/2003	160.65	11/5/2003	156.70	-3.95	
Lee	USGS 03N02E29DAD1	135	112TRRC	3/18/2003	162.25	11/5/2003	159.10	-3.15	
Lee	USSCS 03N01W10DCC1		112TRRC	3/18/2003	134.50	11/5/2003	130.50	-4	
Lincoln	USGS 10S05W04BBB1		110ALVM	2/17/2003	141.00	10/24/2003	139.20	-1.8	
Lonoke	USSCS 02S09W30CDD1	80	110ALVM	2/20/2003	189.10	10/17/2003	189.80	0.7	
Lonoke	USGS 01S10W01ACB1		110ALVM	2/21/2003	189.97	10/17/2003	188.30	-1.67	
Lonoke	USGS 03N10W34ABB1	116	110ALVM	3/17/2003	200.10	10/17/2003	198.40	-1.7	
Lonoke	USSCS 01S09W36CCC1	95	110ALVM	2/21/2003	159.00	10/17/2003	157.45	-1.55	
Lonoke	USGS 02S07W10CCB1		110ALVM	2/20/2003	139.55	10/17/2003	136.95	-2.6	
Lonoke	USGS 02S08W34DBB1		110ALVM	2/20/2003	152.50	10/17/2003	151.05	-1.45	
Lonoke	AR008 01S08W24CDD1	127	110ALVM	2/21/2003	130.35	10/17/2003	127.20	-3.15	
Lonoke	USGS 03N08W21BCC1	155	110ALVM	3/7/2003	144.70	10/17/2003	143.00	-1.7	
Lonoke	USGS 02N08W16ABC1	128	110ALVM	3/7/2003	110.55	10/17/2003	107.80	-2.75	
Lonoke	USGS 02N07W16BAB1	184	110ALVM	3/7/2003	104.40	10/17/2003	102.00	-2.4	
Mississippi	USGS 14N08E12DAB1		110ALVM	3/3/2003	231.80	10/21/2003	226.45	-5.35	
Monroe	USGS 03N03W36AAA1	120	112TRRC	4/7/2003	156.85	10/15/2003	153.80	-3.05	
Monroe	USGS 04N02W28DDD3	137	112TRRC	3/4/2003	159.25	37910.00	157.35	-1.9	
Monroe	USGS 03N01W20ABA1		112TRRC	3/3/2003	142.20	10/16/2003	135.90	-6.3	
Phillips	USSCS 01S02E09CBB1	110	110ALVM	4/3/2003	175.40	11/5/2003	161.50	-13.9	
Phillips	USSCS 01S03E02CBB1		112TRRC	3/21/2003	188.60	11/5/2003	176.00	-12.6	
Phillips	USSCS 01S03E23CDA1		112TRRC	3/20/2003	186.00	11/5/2003	174.10	-11.9	
Poinsett	AR008 10N01E14CC1	150	110ALVM	3/5/2003	141.80	10/21/2003	139.50	-2.3	
Poinsett	USGS 12N03E36ACB1	120	110ALVM	3/5/2003	151.60	10/21/2003	145.30	-6.3	
Poinsett	USGS 11N02E26AAB1	158	110ALVM	3/5/2003	136.10	10/21/2003	134.10	-2	
Poinsett	USGS 11N07E18CAB1	100	110ALVM	3/4/2003	204.40	10/21/2003	201.65	-2.75	
Prairie	USGS 02S06W14BBB1	105	110ALVM	2/18/2003	142.75	10/15/2003	121.80	-20.95	
Prairie	USGS 01N06W26CDD1	105	110ALVM	2/18/2003	150.40	10/15/2003	126.10	-24.3	
Prairie	USGS 02N04W32CCB1		110ALVM	2/18/2003	135.90	10/15/2003	128.40	-7.5	
Prairie	USGS 01N06W05CCB1	155	110ALVM	2/18/2003	102.90	10/15/2003	96.20	-6.7	
Prairie	USGS 02N05W32AAA1		110ALVM	2/11/2003	107.00	10/15/2003	70.00	-37	
Prairie	USGS 02N05W29DDB2	135	110ALVM	2/18/2003	109.90	10/22/2003	108.00	-1.9	

Spring/Fall Draw-downs on
Selected Alluvial Wells
2003

County	Station ID	Well	Aquifer	Date	spring	Date	fall	WL Alt.03	SPRING
					WL Alt.03		WL Alt.03		FALL CHANGE
Prairie	AR008	02N06W17ABB1	180	110ALVM	2/18/2003	111.40	10/15/2003	105.90	-5.5
Prairie	ASWCC	02N06W24CAA	150	110ALVM	4/3/2003	103.18	10/22/2003	104.90	1.72
Prairie	ASWCC	02N06W21DAA1	142	110ALVM	4/3/2003	107.02	10/22/2003	104.80	-2.22
Prairie	ASWCC	02N05W21CB	182	110ALVM	4/3/2003	116.11	10/22/2003	116.80	0.69
Prairie	ASWCC	02N05W24ACB	142	110ALVM	4/3/2003	136.35	10/22/2003	133.90	-2.45
Randolph	USSCS	19N02E09DCA1		110ALVM	3/11/2003	256.60	10/20/2003	253.20	-3.4
Randolph	AR008	20N03E28BA1		110ALVM	3/11/2003	264.30	10/20/2003	262.85	-1.45
Randolph	USGS	18N01E34AAC1		112TRRC	3/12/2003	249.90	10/20/2003	248.45	-1.45
St. Francis	USGS	05N06E34CAB1	110	110ALVM	3/26/2003	173.10	11/5/2003	169.70	-3.4
St. Francis	USGS	05N02E20ADC1	79	110ALVM	3/15/2003	154.05	11/5/2003	157.70	3.65
St. Francis	USGS	04N02E19BBB1	72.2	110ALVM	3/25/2003	151.25	11/5/2003	149.50	-1.75
St. Francis	USGS	04N01W28CDD1		110ALVM	3/25/2003	138.25	11/5/2003	135.20	-3.05
White	USGS	07N05W01AAA1		110ALVM	2/10/2003	182.45	11/4/2003	186.90	4.45
White	USGS	07N05W32BAB1	80	110ALVM	2/10/2003	185.10	11/4/2003	183.50	-1.6
White	AR008	06N06W04AAD1		110ALVM	2/10/2003	176.00	11/4/2003	176.80	0.8
Woodruff	USGS	08N02W31DDD1	40	110ALVM	2/12/2003	190.30	11/4/2003	189.60	-0.7
Woodruff	USGS	08N03W31AAD1	110	110ALVM	2/12/2003	189.10	11/4/2003	185.70	-3.4
Woodruff	USGS	08N01W06DDD1		110ALVM	2/12/2003	174.30	11/4/2003	172.90	-1.4

Appendix G

New ASWCC Well Water-Quality Tables

Sample Information	Well No.	Units	AR1-01	AR2-02	AR3-03	AR4-04	AR7-SW8
	Sampling date	mm/dd/yyyy	06/05/2002	06/05/2002	06/11/2002	06/11/2002	06/11/2003
Location	Aquifer	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
Latitude	342036	341343	342552	342736	340740		
Longitude	910743	911102	912252	912251	912115		
Major Cations	Calcium	mg/L	82.19	73.46	93.36	86.63	162.130
	Magnesium	mg/L	20.45	22.15	25.51	32.08	39.511
	Sodium	mg/L	11.26	14.84	52.79	53.57	79.52
	Potassium	mg/L	1.1	1.8	2.7	4.6	2.702
Trace Metals	Iron	mg/L	0.045	1.753	1.663	1.507	3.352
	Lead	mg/L	0.01	0.00	0.00	0.00	0
	Manganese	mg/L	0.018	0.193	0.236	0.172	0.324
	Zinc	mg/L	0.014	0.021	0.036	0.020	0.000
Alkalinity	Alkalinity	mg/L as CaCO ₃	280.54	263.90	407.06	385.35	432.24
Major Anions	Bicarbonate	mg/L	340.31	319.64	491.01	465.71	526.43
	Carbonate	mg/L	0.94	1.12	2.72	2.14	0.44
	Chloride	mg/L	13.66	12.79	45.42	35.62	156.971
	Sulfate	mg/L	17.08	9.50	13.46	27.09	38.482
Trace Anions	Bromide	mg/L	0.156	0.040	0.112	0.110	0.285
	Fluoride	mg/L	0.050	0.220	0.190	0.210	0.000
Nutrients	Nitrate	mg/L as N	0.083	0.037	0.016	0.017	0.008*
	Ortho Phosphate	mg/L	0.0719	0	0	0	0
pH	pH		7.78	7.88	8.08	8.00	7.26
Other Characteristics	Conductivity	uS/cm	573	541	880	844	1296
	TSS	mg/L	0.40	0.30	1.12	0.56	-
	TDS	mg/L	361	335	561	491	824*
Biological Character	Total Coliform	MPN/100 ml	3	>200.5	3	15	-
	E. coli	MPN/100 ml	<1	>200.5	<1	<1	-

* Exceeded Holding Time

- No data

? Questionable Data

SW wells are ASWCC wells

Other wells are private wells

Sample Information	Well No.	Units	PRI-01	PR2-02	PR3-03	PR4-SW3	PR5-SW4	PR6-SW5	PR7-SW6	PR8-SW7
	Sampling date	mm/dd/yyyy	06/04/2002	06/04/2002	06/06/2002	03/04/2003	02/16/2003	03/05/2003	02/19/2003	05/28/2003
Location	Aquifer	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
Latitude	345718	344254	345844	344653	344651	344649	344700	343826		
Longitude	914728	912850	914629	913827	913550	913359	922933	913613		
Major Cations	Calcium	mg/L	61.10	129.53	54.94	127.273	103.829	99.998	86.387	89.612
	Magnesium	mg/L	15.04	40.79	12.90	25.569	22.113	22.403	22.950	26.064
	Sodium	mg/L	13.14	45.44	18.68	29.09	26.57	37.99	21.34	51.330
	Potassium	mg/L	1.0	2.6	1.2	1.43	1.37	2.12	1.77	1.390
Trace Metals	Iron	mg/L	0.026	4.384	0.027	2.198	2.020	2.162	0.965	1.463
	Lead	mg/L	0.00	0.01	0.00	0.013	0.004	0.004	0.965	0.001
	Manganese	mg/L	0.005	0.190	0.001	0.308	0.193	0.191	0.166	0.185
	Zinc	mg/L	0.019	0.041	0.019	0.013	0.017	0.011	0.014	0.000
Alkalinity	Alkalinity	mg/L as CaCO ₃	197.38	363.55	205.93	368.00	124?	270.00	124?	274.18
Major Anions	Bicarbonate	mg/L	239.93	440.90	249.58	446.84	149.03?	328.54	149.27?	334.28
	Carbonate	mg/L	0.42	1.28	0.79	1.03	1.06?	0.42	0.95?	0.11
	Chloride	mg/L	11.37	66.30	14.86	21.99	28.13	57.34	4.71	28.125
	Sulfate	mg/L	2.46	117.92	1.83	88.20	32.93	78.52	32.58	85.398
Trace Anions	Bromide	mg/L	0.105	0.401	0.146	0.17	0.076	0.45	0.00	0.213
	Fluoride	mg/L	0.05	0.18	0.19	0.13	0.09	0.14	0.14	0.149
Nutrients	Nitrate	mg/L as N	0.076	0.000	0.231	0.03	0.02	0.08	0.14	1.894*
	Ortho Phosphate	mg/L	0.1399	0	0.0636	0.0332	0	0	0.013	0.0509
pH	pH		7.58	7.80	7.84	7.70	8.19	7.44	8.14	6.850
Other Characteristics	Conductivity	uS/cm	405	1044	439	880	288	820	279	770
	TSS	mg/L	0.65	8.00	0.18	15.0	7.8	30.1	13.8	-
	TDS	mg/L	263	729	279	569	463	514	401	511*
Biological Character	Total Coliform	MPN/100 ml	<1	<1	70	59.000	>200.5	165	95	-
	E. coli	MPN/100 ml	<1	<1	<1	<1	<1	<1	<1	-

* Exceeded Holding Time

- No data

? Questionable Data

Sample Information	Well No.	Units	LO1-01	LO2-SW1	LO3-SW2	LO4-SW9	MN1-SW10
	Sampling date	mm/dd/yyyy	06/06/2002	06/19/2002	06/18/2002	06/25/2003	06/18/2003
Location	Aquifer		Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
Latitude			345059	343007	343430	343843	343301
Longitude			915309	915237	915447	920337	910456
Major Cations	Calcium	mg/L	17.56	112.51	107.62	52.696	142.411
	Magnesium	mg/L	6.56	29.50	24.83	14.520	53.309
	Sodium	mg/L	13.34	47.12	33.09	69.30	43.89
	Potassium	mg/L	0.9	1.8	1.6	2.244	1.978
Trace Metals	Iron	mg/L	3.373	10.918	9.775	10.605	4.917
	Lead	mg/L	0.01	0.01	0.01	0	0
	Manganese	mg/L	2.054	0.297	0.215	0.296	0.317
	Zinc	mg/L	0.022	0.022	0.027	0.000	0.000
Alkalinity	Alkalinity	mg/L as CaCO ₃	61.97	337.99	281.98	241.96	431.99
Major Anions	Bicarbonate	mg/L	75.62	411.20	340.29	295.01	525.87
	Carbonate	mg/L	0.01	0.56	1.80	0.09	0.57
	Chloride	mg/L	11.57	48.94	32.73	19.874	71.918
	Sulfate	mg/L	25.01	92.64	105.01	0.000	92.961
Trace Anions	Bromide	mg/L	0.108	0.216	0.162	0.000	0.410
	Fluoride	mg/L	0.28	0.12	0.11	0.069	0.047
Nutrients	Nitrate	mg/L as N	0.019	0.026	0.037	0.140*	0.058*
	Ortho Phosphate	mg/L	0	-	-	0	0
pH	pH		6.36	7.47	8.06	6.830	7.370
Other Characteristics	Conductivity	uS/cm	212	929	818	606	1133
	TSS	mg/L	0.60	17.20	42.24	-	-
	TDS	mg/L	173	539	765	390*	773*
Biological Character	Total Coliform	MPN/100 ml	<1	12	>200.5	-	-
	E. coli	MPN/100 ml	<1	<1	2	-	-

* Exceeded Holding Time

- No data

? Questionable Data

Sample Information	Well No.	Units	PR5-SW4D	PR7-SW6D	AR5-05	AR6-06
	Sampling date	mm/dd/yyyy	03/12/2003	03/27/2003	06/12/2002	06/12/2002
Location	Aquifer	Sparta	Sparta	Sparta	Sparta	Sparta
Latitude	344650	344700	341245	341318		
Longitude	913550	912933	912947	912909		
Major Cations	Calcium	mg/L	64.419	48.524	3.57	3.38
	Magnesium	mg/L	16.300	10.774	0.97	0.93
	Sodium	mg/L	44.95	52.85	60.74	37.23
	Potassium	mg/L	3.86	3.68	2.9	3.4
Trace Metals	Iron	mg/L	2.310	1.226	0.042	0.057
	Lead	mg/L	0	0.005	0.00	0.00
	Manganese	mg/L	0.050	0.063	0.023	0.011
	Zinc	mg/L	0.037	0.012	0.158	0.155
Alkalinity	Alkalinity	mg/L as CaCO ₃	280.00	240.00	139.80	96.00
Major Anions	Bicarbonate	mg/L	334.46	288.72	169.57	116.71
	Carbonate	mg/L	3.44	1.96	0.47	0.19
	Chloride	mg/L	21.99	24.01	3.89	4.23
	Sulfate	mg/L	7.64	1.01	1.39	0.11
Trace Anions	Bromide	mg/L	0.093	0.225	0.000	0.000
	Fluoride	mg/L	0.14	0.20	0.400	0.310
Nutrients	Nitrate	mg/L as N	0.01	0.77	0.000	0.000
	Ortho Phosphate	mg/L	0	0.047	0.1357	0.1054
pH	pH		8.35	8.17	7.78	7.56
Other Characteristics	Conductivity	uS/cm	616	536	280	195
	TSS	mg/L	11.44	21.68	0.00	0.08
	TDS	mg/L	346	291	159	113
Biological Character	Total Coliform	MPN/100 ml	-	-	59	1
	E. coli	MPN/100 ml	-	-	<1	<1

* Exceeded Holding Time

- No data

? Questionable Data